

HEAT SINKERS
DISSIPATION SYSTEMS AND ACCESSORIES





CISQ is a member of



The International Certification Network
www.iqnet-certification.com

CERTIFICATO N. 39391/20/S
CERTIFICATE No.

SI CERTIFICA CHE IL SISTEMA DI GESTIONE PER LA QUALITÀ DI
IT IS HEREBY CERTIFIED THAT THE QUALITY MANAGEMENT SYSTEM OF

TRE-S S.R.L.

VIA DEL PROGRESSO 26 36050 SOVIZZO (VI) ITALIA
NELLE SEGUENTI UNITÀ OPERATIVE / *IN THE FOLLOWING OPERATIONAL UNITS*

VIA DEL PROGRESSO 26 36050 Sovizzo (VI) ITALIA

È CONFORME ALLA NORMA / *IS IN COMPLIANCE WITH THE STANDARD*

ISO 9001:2015

PER I SEGUENTI CAMPI DI ATTIVITÀ / *FOR THE FOLLOWING FIELD(S) OF ACTIVITIES*

Per informazioni sulla validità
del certificato, visitare il sito
www.rina.org

For information concerning
validity of the certificate, you
can visit the site
www.rina.org

Per i requisiti della norma non
applicabili al campo di applicazione
del sistema di gestione
dell'organizzazione, riferirsi alle
informazioni documentate relative.

Reference is to be made to the
relevant documented information
for the requirements of the
standard that cannot be applied to
the Organization's management
system scope

IAF:17

PROGETTAZIONE E REALIZZAZIONE DI DISSIPATORI DI CALORE METALLICI PER APPARECCHIATURE INDUSTRIALI PER
L'INDUSTRIA DI POTENZA.

DESIGN AND REALIZATION OF METALLIC HEAT DISSIPATORS FOR INDUSTRIAL EQUIPMENT FOR THE POWER INDUSTRY.

La validità del presente certificato è subordinata a sorveglianza periodica annuale / semestrale ed al riesame completo del sistema di gestione con periodicità triennale

The validity of this certificate is dependent on an annual / six monthly audit and on a complete review, every three years, of the management system

L'uso e la validità del presente certificato sono soggetti al rispetto del documento RINA: Regolamento per la Certificazione di Sistemi di Gestione per la Qualità

The use and validity of this certificate are subject to compliance with the RINA document : Rules for the certification of Quality Management Systems

Prima emissione First Issue	12.02.2020	Data decisione di rinnovo Renewal decision date	11.02.2023
Data scadenza Expiry Date	11.02.2026	Data revisione Revision date	11.02.2023

Paolo Taddia

Venice & Verona Management
System Certification, Head



www.cisq.com



SGQ N° 002 A

Membro degli Accordi di Mutuo
Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC
Mutual Recognition Agreements

RINA Services S.p.A.
Via Corsica 12 - 16128 Genova Italy

CISQ è la Federazione Italiana di Organismi di
Certificazione dei sistemi di gestione aziendale
CISQ is the Italian Federation of
management system Certification Bodies

TRE-S is a company that operates in the power industry, particularly in the design and production of heat dissipators (made of aluminum, copper, and brass) and accessories and components that are used to dissipate heat generated by electronic components.

TRE-S has decided to adopt a Quality Management System (QMS) according to the international standard UNI EN ISO 9001:2015. To this end, it has defined its own context, the internal and external factors that influence it, the relevant interested parties, and their anticipated expectations. Moreover, strategic directions have been established to define quality objectives with the perspective of achieving success and ensuring sustainable growth for our customers as well.

The design, using CAD-CAM systems and CNC machining centers, is managed by a networked system and completely controlled by the technical office. The personnel undergo training, and checks are performed at every stage of the manufacturing process, allowing for a high level of quality. Quality control devices such as roughness testers, digital calipers, micrometers, plug gauges, etc., are used.



The quality objectives defined by TRE-S are as follows: • Adherence to delivery deadlines

- Strong problem-solving skills for customer issues*
- High quality standards for processed products and their competitiveness*
- Prompt and clear communication with customers*
- Achieving satisfactory financial results in line with investments made*
- Relying on competent and reliable internal and external collaborators.*

INDEX

QUALITY.....	2 pages
<i>ISO 9001 Certificate</i>	
<i>Company Policy</i>	
INDEX.....	4 pages
HISTORY.....	5 pages
<i>Since 1991: Heat dissipator manufacturing</i>	
SERVICES.....	7 pages
TECHNICAL MECHANICAL INFORMATION.....	8 pages
<i>Comparison table of supply physical states</i>	
<i>Comparison table of plastic processing alloys</i>	
<i>Weight chemical composition</i>	
<i>Mechanical characteristics</i>	
HIGH-EFFICIENCY PROFILES.....	10 pages
<i>Aluminum/Aluminum profile</i>	
<i>Copper/Aluminum profile</i>	
<i>Copper/Copper profile</i>	
LIQUID DISSIPATORS.....	14 pages
PRO-PRI PROFILE INDEX.....	16 pages
PROFILES FOR LOW AND MEDIUM POWER.....	17 pages
PROFILES FOR SCREW ATTACHMENT DEVICES.....	22 pages
WELDED PROFILES.....	24 pages
PROFILES FOR CLIP-BASED DISSIPATORS.....	26 pages
PROFILES FOR POWER MODULE DISSIPATORS....	28 pages
INSERTED DISSIPATOR PROFILES.....	39 pages
DISC CELL PROFILES.....	44 pages
CLAMPS-SYSTEMS.....	47 pages
<i>Type a</i>	
<i>Type b</i>	
<i>Type c</i>	
<i>Type d</i>	
STANDARD PROFILES.....	52 pages
<i>Flat and square bars</i>	
<i>Unequal and equal angle profiles</i>	
<i>"T" and "U" profiles</i>	
<i>Square and rectangular tubes</i>	
ACCESSORIES.....	57 pages

HISTORY

TRE-S is a rapidly expanding company. Founded in 1991, it operates in the mold production sector, from which it acquires knowledge of product peculiarities.

Over the years, evolution has led to specialization in the field of heat sink processing, which accounts for the majority of our revenue.

Through continuous investment, the company now boasts a working area of over 3500 square meters and employs over 40 collaborators who are trained and educated to achieve production excellence.

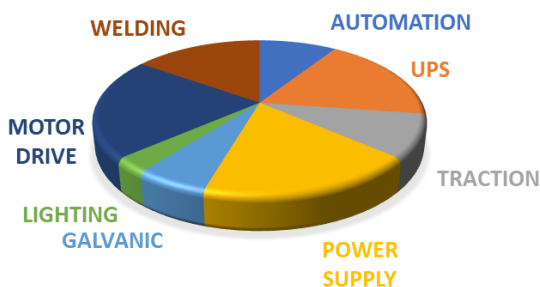
The extensive range of our custom and consumer products enables us to meet the most specific requests of our customers.

STRENGTHS

- Over 30 years of experience
- 500,000 heat sinks produced per year
- 40 operational personnel
- Over 350 active molds
- Maximum production efficiency
- 6 sales representatives across Italy
- Tenacious pursuit of the "good of the company"
- Flexibility
- Involvement of collaborators.



FIELD OF APPLICATION



Production is aimed at a wide range of application fields, including telecommunications, energy, automotive, motor drivers, power suppliers, railway, UPS, lighting, and more.

The research, development, and technical office sectors support the client from the idea to the design and ultimately to production.

Through specific thermal resistance calculation software, we are able to meet and respond to your needs both for existing products and for new studies.

Our business activities cater to both the Italian and international markets.

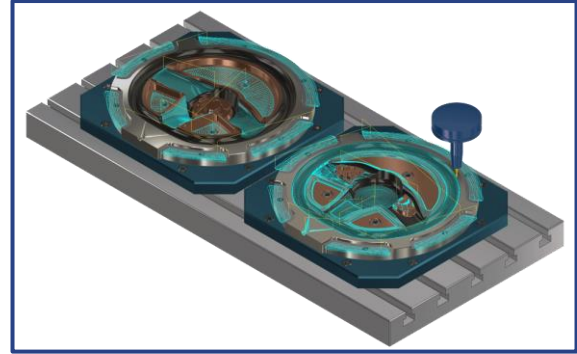
SERVICES

CAD DESIGN

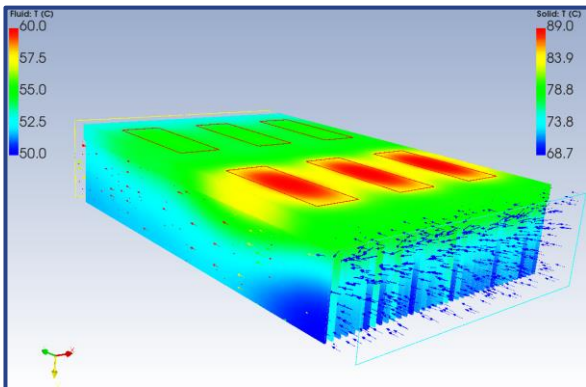
Through the use of state-of-the-art CAD software, we develop two-dimensional and three-dimensional models that reflect a project that is already a reality for us.

CUSTOM DIES

The design, verification, and development of custom molds allow us to provide our customers with greater technical support in order to materialize every project.



THERMAL RESISTANCE CALCULATION



A strength of TRE-S is the use of a specific program called "Q-fin," which allows us to provide technical assistance to our customers through specific thermal studies. This enables us to calibrate new applications by managing the appropriate profile based on project specifications.

SURFACE TREATMENTS

We are able to provide surface treatments on heat sinks such as:

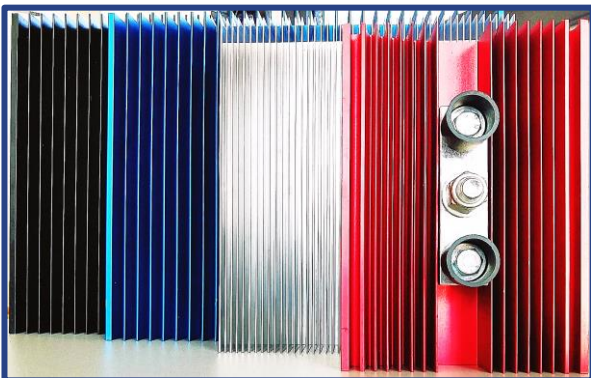
Anodizing

Sandblasting

Polishing

Surtec 650

Alodine 1200



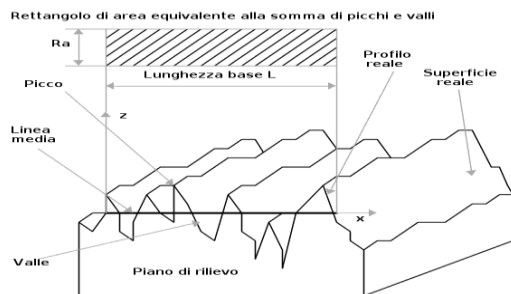
TECHNOLOGY

- ✓ The tolerances on the nominal dimensions of the extruded profiles strictly follow the UNI 3879 (DIN 1748) standards.
- ✓ All machining dimensions without tolerance indication are subject to a medium precision level according to UNI 5307.
- ✓ Threaded holes have a useful thread depth of at least twice their diameter.
- ✓ Regarding geometric tolerances, the flatness value on surfaces can be defined as 0+/- 0.05 mm/m.

ROUGHNESS MEASUREMENT

To introduce the concept of roughness measurement, it is necessary to define some characteristic parameters (see Figure 1):

- ✓ Measurement length (L): it is the section of the technical profile where roughness measurements are taken.
- ✓ Mean line of the profile: it is the compensating line of the actual profile, parallel to the technical profile, within the limits of the measurement length (L). Let y be the deviations of the actual profile from the mean line (measured orthogonally to it), and let x be the distance on the mean line between the starting point of the profile measurement and the point where y is measured (see Figure 1). The mean line of the profile is defined as the line that satisfies the following relationship:



(fig. 1)

THE DEGREE OF FINISH OF THE MACHINED SURFACES

Roughness measurement is determined by the amplitude R, which represents the arithmetic mean value of the absolute deviations y of the actual profile from the mean line.

$$R_q = \sqrt{\frac{1}{L} \int_0^L y^2 dx}$$

R for Roughness stands for arithmetic mean.

Roughness measurements are expressed in μm . The roughness grade of a surface is defined as the maximum value of R among those measured at different points on the surface.

COMPARISON TABLE OF PLASTIC WORKING ALLOYS

Denominazione	- Uni - Italia		- Nf - Francia		- Din - Germania	- Bs - Regno Unito		Astm USA
	Rif. N. della norma	Designazione numerica	Designazione alfa numerica	Designazione numerica		Precedente designazione	Nuova designazione	
6060	9006/1	6060	A-GS	6060	Al Mg Si 0,5	(H9)	(6063)	(6063)
6063	9006/1	(6060)	(A-GS)	(6060)	(Al Mg Si 0,5)	H9	6063	6063
6082	9006/4	6082	A-SGM 0,7	6082	Al Mg Si 1	H30	(6082)	(6351)

COMPARISON TABLE OF THE PHYSICAL STATES OF SUPPLY

Descrizione	Adtm USA	- Uni - Italy/Italia		- Din - Germania	- NF - Francia	- BS - Regno unito	ISO
		EX					
Raffreddato al termine di un processo di lavorazione plastica ad elevata temperatura ed invecchiato artificialmente	T5	TaA	T5	F...	T5	TE	TE
Solubilizzato, temprato ed invecchiato artificialmente	T6	TA	T6	F...	T6	TF	TF

CHEMICAL COMPOSITION BY WEIGHT

Denominazione Tre-s	Cu	Fe	Mn	Mg	Si	Zn	Cr	Ti	Al
6060	0,10	0,10 ÷ 0,30	0,10	0,35 ÷ 0,6	0,3 ÷ 0,6	0,15	0,05	0,10	Rem/Resto
6063	0,10	0,35	0,10	0,45 ÷ 0,90	0,2 ÷ 0,6	0,10	0,10	0,10	Rem/Resto
6082	0,10	0,50	0,4 + 1	0,6 + 1,2	0,7 + 1,3	0,20	0,25	0,10	Rem/Resto

MECHANICAL CHARACTERISTICS MECCANICHE

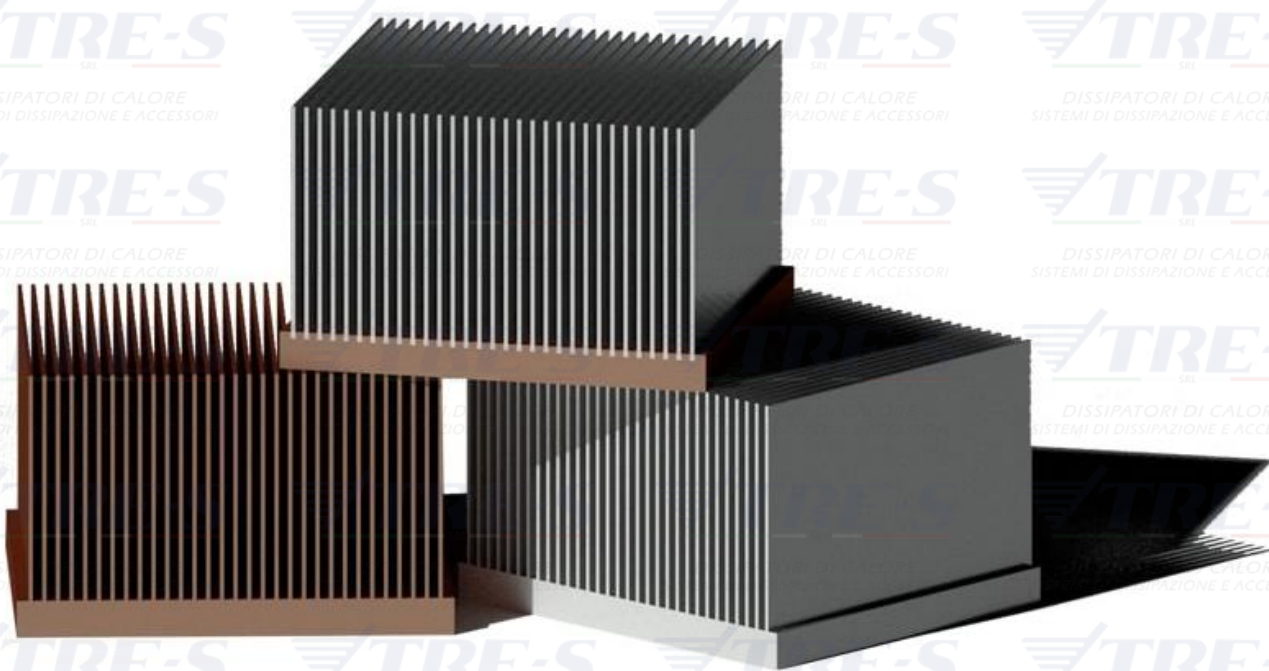
Descrizione Tre-s		Stato	Caratteristiche meccaniche minime o massime a norme UNI				Dimensioni	Caratteristiche meccaniche tipiche indicative delle leghe			
			Rm N/mm²	Rp 0.2 N/mm²	A5%	HB		Rm N/mm²	Rp 0.2 N/mm²	A5%	HB
Estruso	6060	T5	190	150	12	55	Sp. = 12	210	160	18	60
		T6	205	165	10	60	Sp. = 8	220	200	15	75
	6063	T6	245	200	9	80	Sp. = 5	260	230	12	90
	6082	T6	315	270	10	95	Sp. = 5	270	225	10	105

MECHANICAL CHARACTERISTICS

Descrizione	Densità (kg/m³)x10³	Coefficiente di dilatazione termica 20÷100 °C [10-6/°C]	Intervallo temperatura di fusione °C indicativo	Resistività elettrica		Conducibilità termica		Calore specifico 0÷100 °C [cal/g °C]	Modulo di elasticità N/mm²
				Stato	Omm²/mm	Stato%	W/mK		
6060	2,70	23,2	615 + 655	T1	0,034	T1	193	0,23	69,000
				T5	0,031	T5	209		
				T6	0,033	T6	201		
6063	2,70	23,4	615 + 655	T1	0,034	T1	193	0,23	69,000
				T5	0,031	T5	209		
				T6	0,033	T6	201		
6082	2,71	24	585 + 645	T6	0,037	T6	167	0,23	69,000

ASSEMBLED PROFILES

Heat sinks are characterized by materials such as aluminum and copper, which are manufactured through a chemical molecular fusion between the block and the fins. This process aims to make the heat sink custom and more high-performing by increasing the dissipation surface through narrower fin spacing



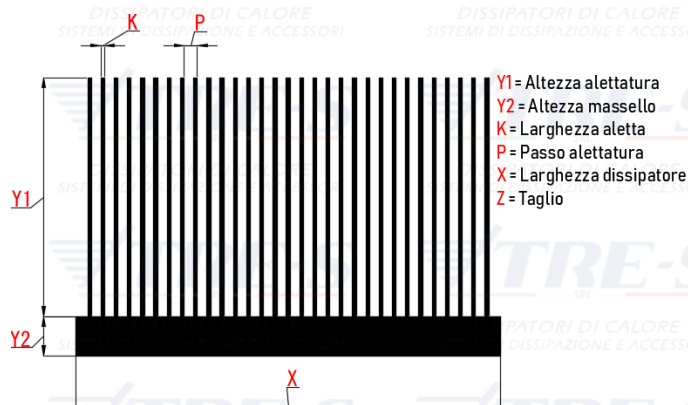
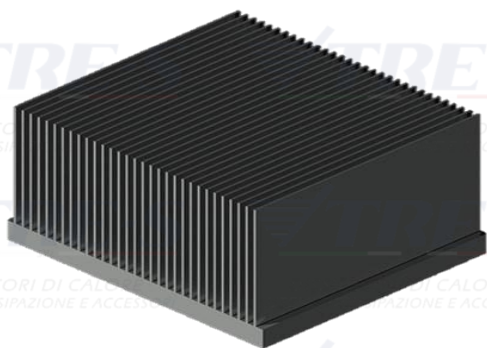
The application sectors include:

- ✓ **Welding industry (welding sector)**
- ✓ **Uninterruptible power supply industry (UPS)**
- ✓ **Automotive industry**
- ✓ **Traction and braking industry**
- ✓ **Renewable energy industry**
- ✓ **Electromedical sector industry**

ASSEMBLED ALUMINIUM

PROFILES

Assembled heat sinks are manufactured through a chemical molecular fusion between the base and the aluminum fins.



PRA1001

Y1 (FIN HEIGHT): 120.7

Y2 (BASE HEIGHT): 19.8

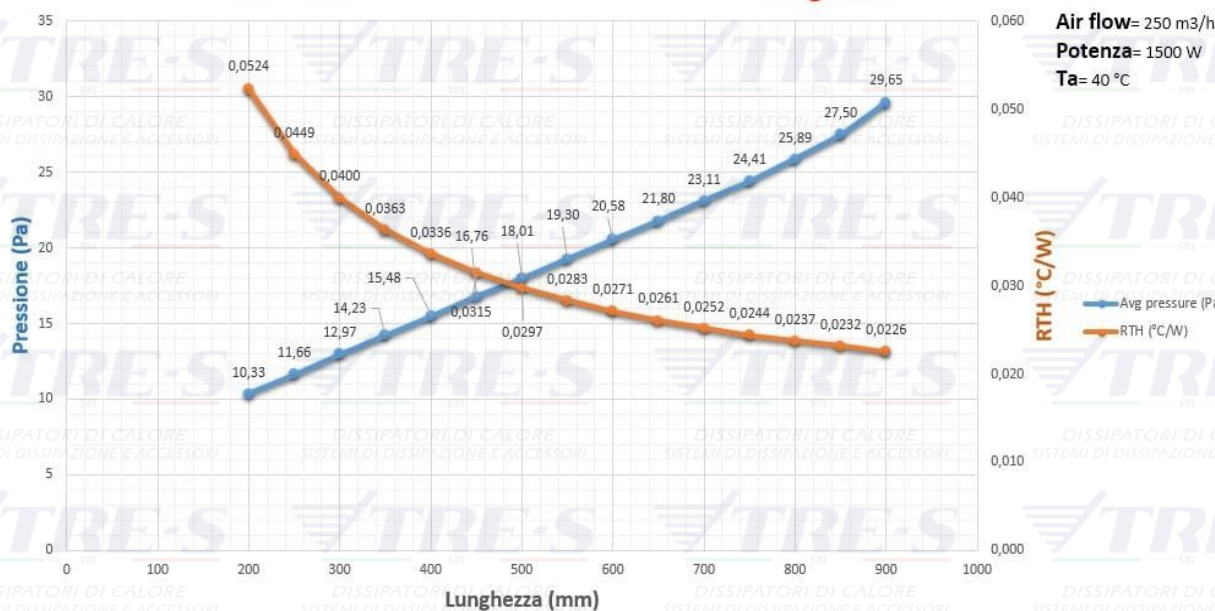
K (FIN WIDTH): 2

P (FIN PITCH): 7.12

X (HEAT SINK WIDTH): 228

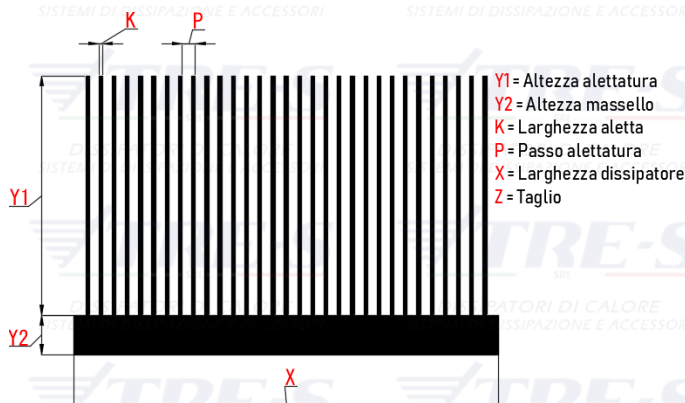
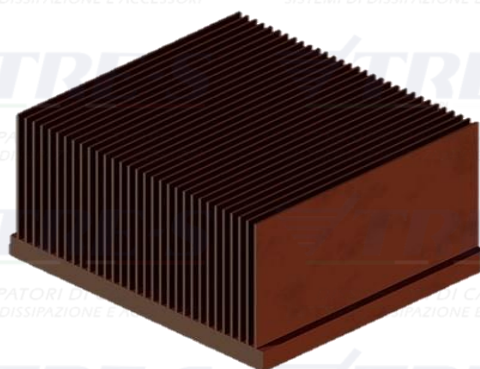
Z (CUT): 406

Grafico della CDP e RTH in funzione della variazione della lunghezza



COPPER ASSEMBLED PROFILES

Assembled heat sinks are manufactured through a chemical molecular fusion between the base and the copper fins.



PRA1003

Y1 (FIN HEIGHT): 120.7

Y2 (BASE HEIGHT): 19.8

K (FIN WIDTH): 2

P (FIN PITCH): 7.12

X (HEAT SINK WIDTH): 228

Z (CUT): 406

Grafico della CDP e RTH in funzione della variazione della lunghezza

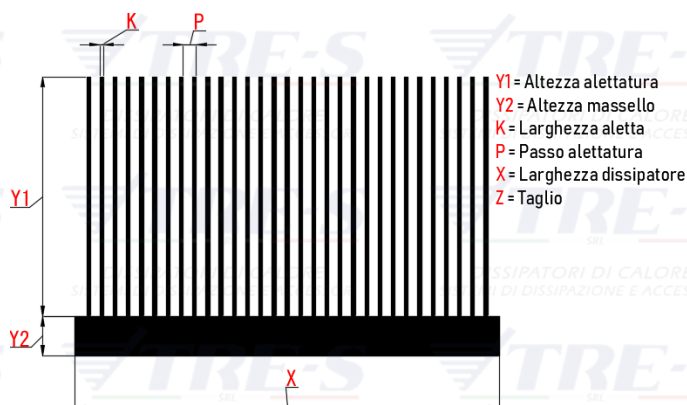
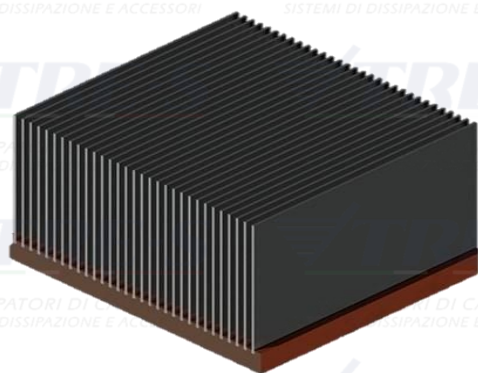


Air flow= 250 m3/h
Potenza= 1500 W
Ta= 40 °C

— Avg pressure (Pa)
— RTH (°C/W)

COPPER-ALUMINIUM ASSEMBLED PROFILES

Assembled heat sinks are manufactured through a chemical molecular fusion between the base and the aluminum-copper fins.



PRA1002

Y1 (FIN HEIGHT): 120.7

Y2 (BASE HEIGHT): 19.8

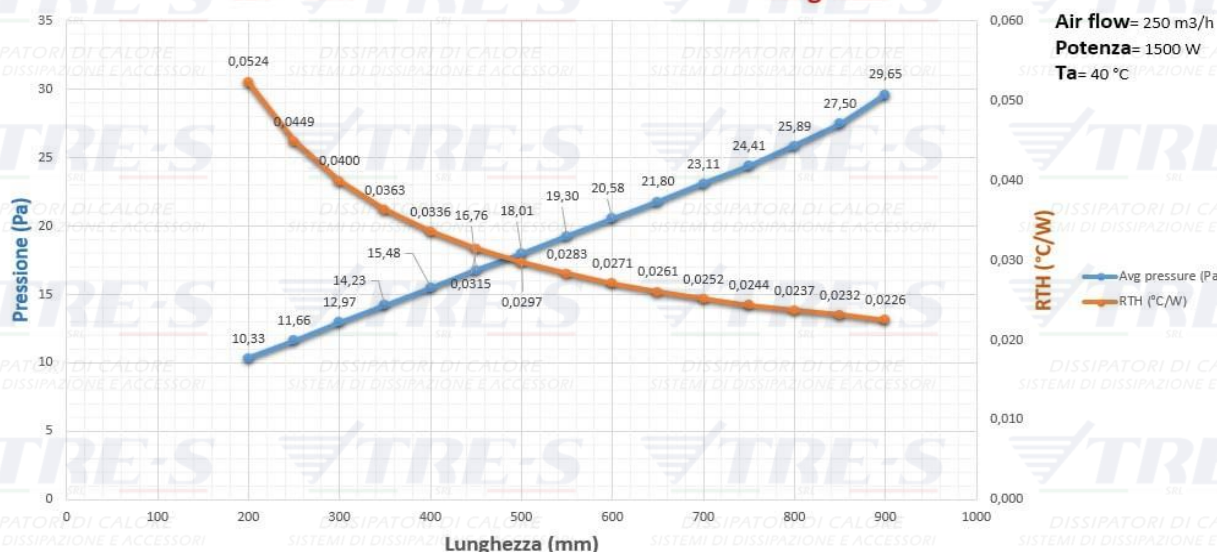
K (FIN WIDTH): 2

P (FIN PITCH): 7.12

X (HEAT SINK WIDTH): 228

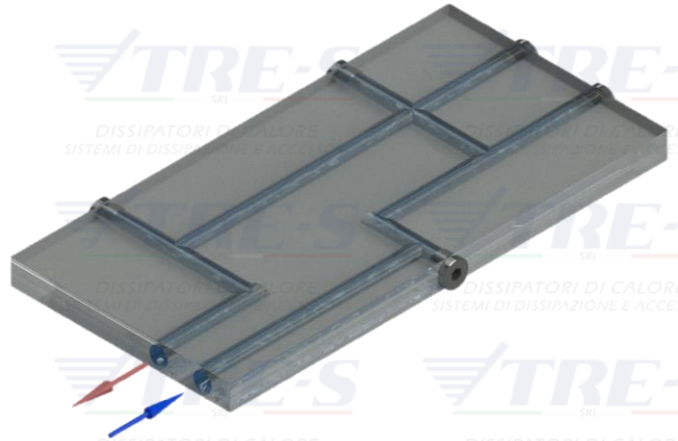
Z (CUT): 406

Grafico della **CDP** e **RTH** in funzione della variazione della **lunghezza**

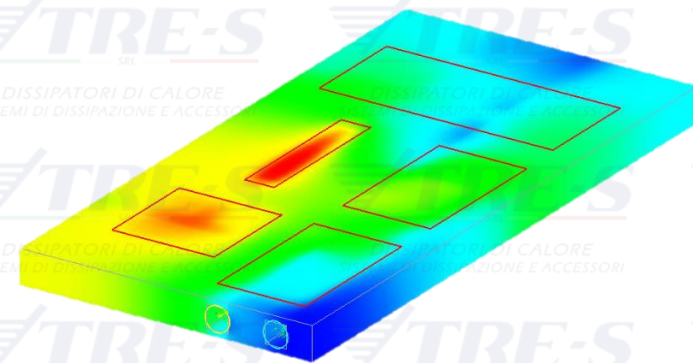


LIQUID HEAT SINKS

Liquid heat sinks with through-holes are obtained either directly through extrusion or by deep drilling solid plates. The circuit of the channels, whether extruded or custom-designed, is achieved by sealing the channels externally and internally at specific points defined by the customer's project. By using sealed plugs, we can control the circulation of the liquid within the plate.



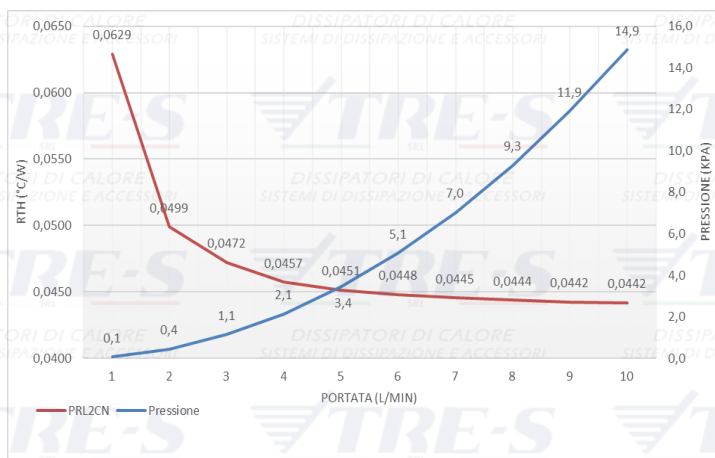
TRE-S can adopt various solutions at the customer's discretion in order to achieve maximum performance in the components it assembles through thermal studies. Cooling with water is increasingly becoming the ideal alternative to dissipate the high powers generated by the new generation of IGBT transistors.



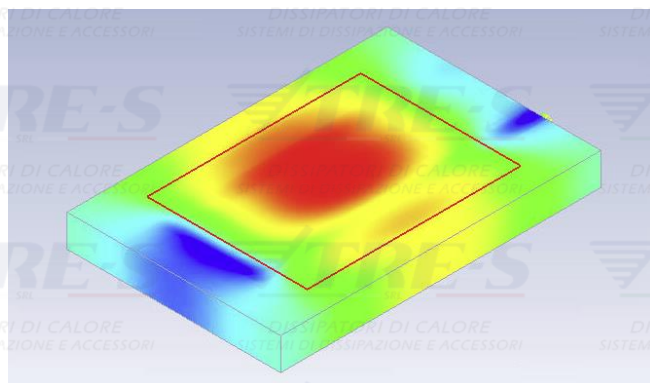
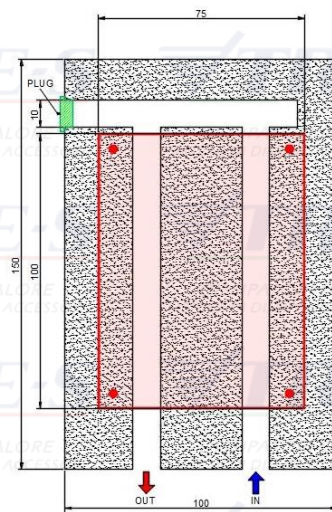
Advantages of liquid heat sink:

1. The ability to separate the area where power is generated, which is usually limited, from the dissipation area.
2. Avoiding noise and issues caused by vibrations.
3. Suitable for use in dusty environments where forced air is not feasible.

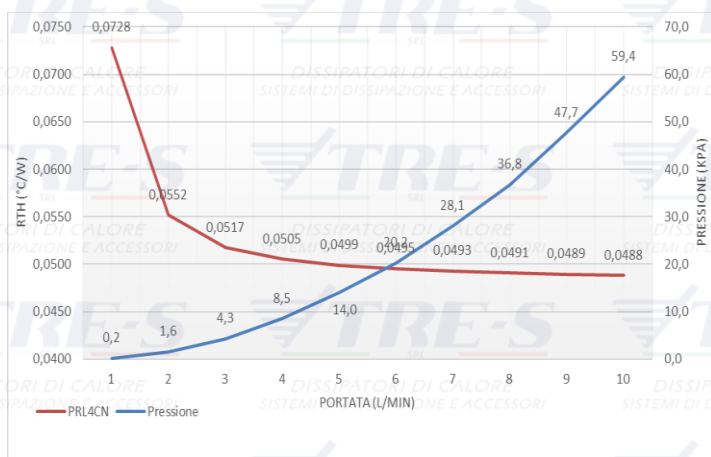
PRL 150x100x20 2 Fori passanti



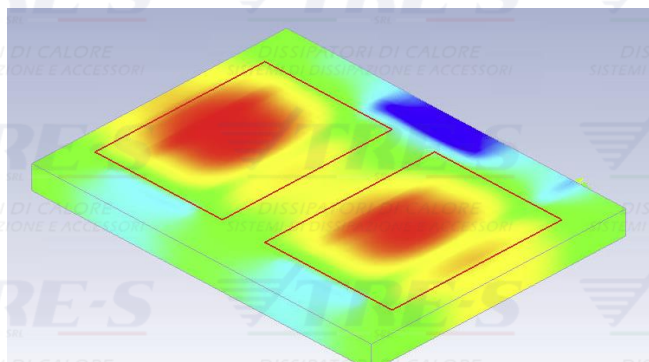
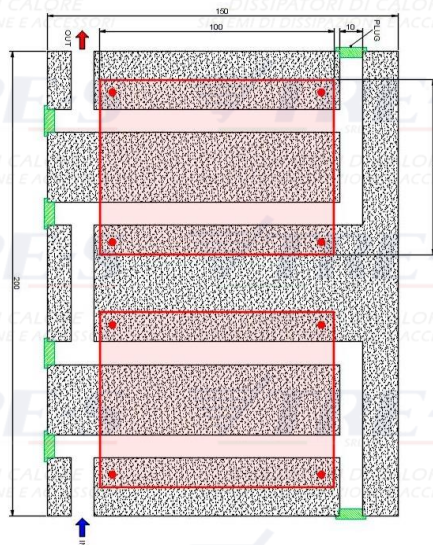
Piastra di base: Al EN AW-6060
 Liquido dissipativo: H₂O, Tin 25°C
 Potenza Dissipata: 1 kW (A Modulo)



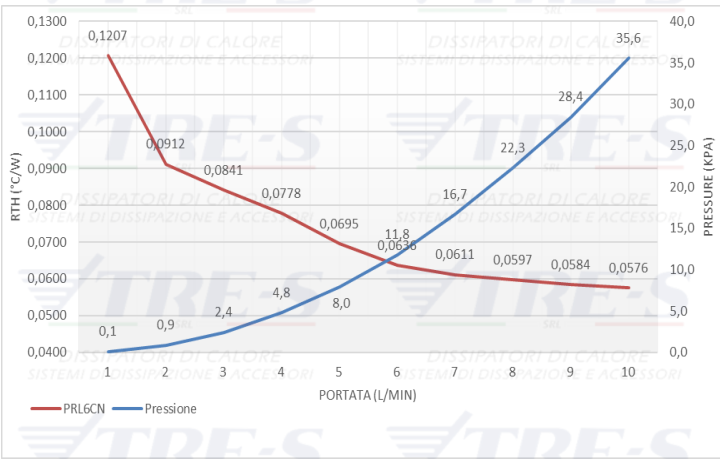
PRL 150x200x20 4 Fori passanti



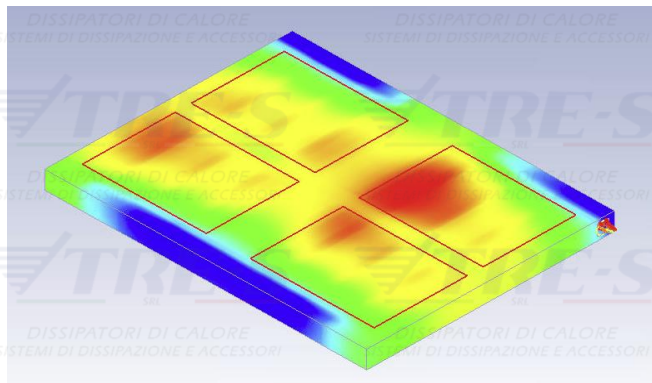
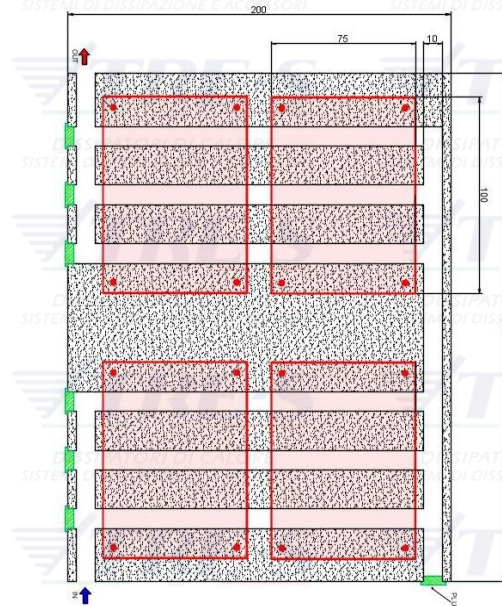
Piastra di base: Al EN AW-6060
 Liquido dissipativo: H₂O, Tin 25°C
 Potenza Dissipata: 1 kW (A Modulo)



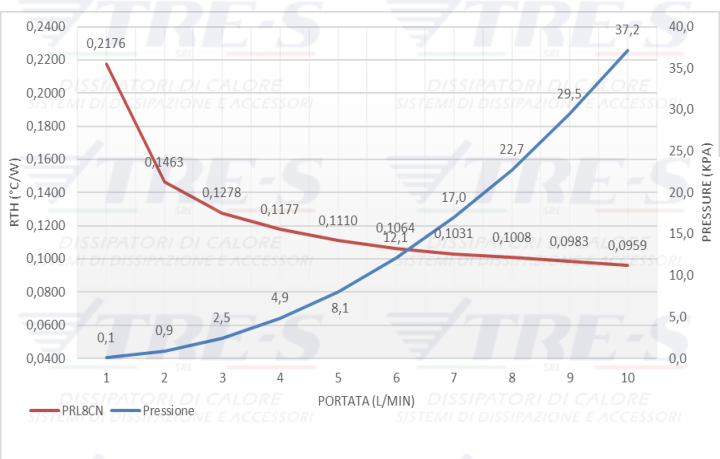
PRL 200x260x20 6 Fori passanti



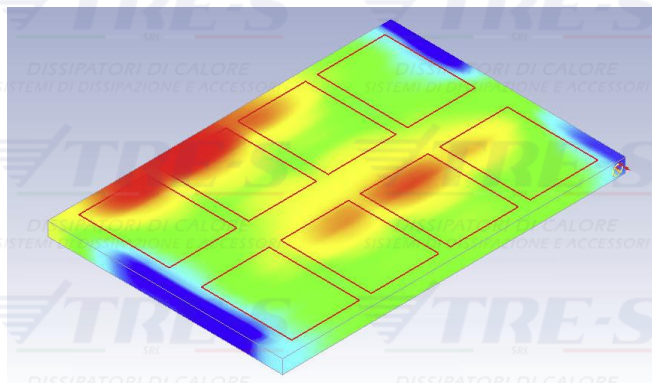
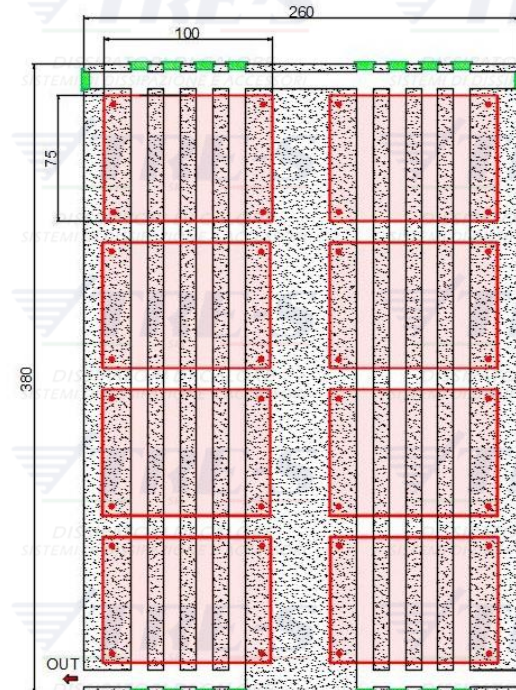
Piastra di base: Al EN AW-6060
Liquido dissipativo: H₂O, Tin 25°C
Potenza Dissipata: 1 kW (A Modulo)



PRL 380x260x20 8 Fori passanti



Piastra di base: Al EN AW-6060
Liquido dissipativo: H₂O, Tin 25°C
Potenza Dissipata: 1 kW (A Modulo)

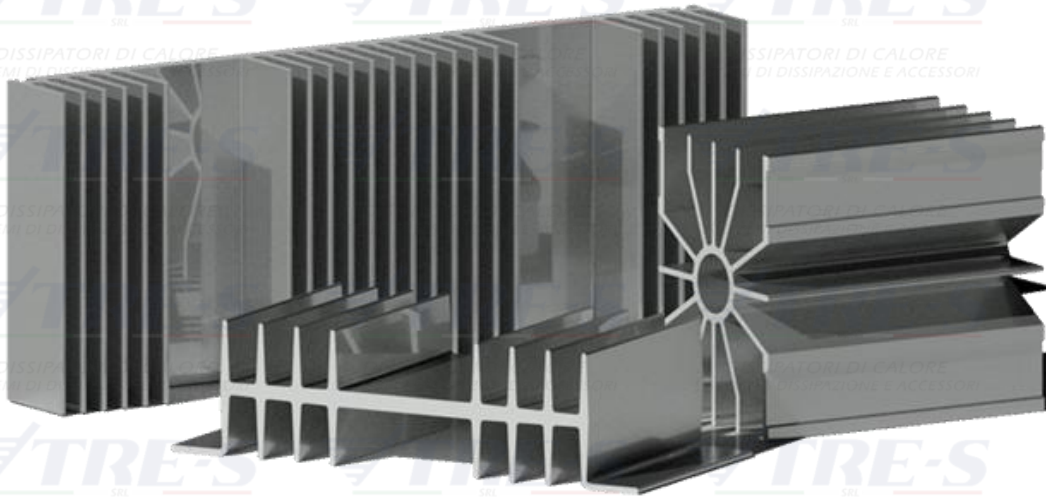


PR01003	Pag. 18	PR01083	Pag. 30	PR01178	Pag. 32	PR01255	Pag. 25
PR01005	Pag. 19	PR01084	Pag. 30	PR01179	Pag. 32	PR01256	Pag. 25
PR01010	Pag. 19	PR01085	Pag. 35	PR01181	Pag. 33	PR01257	Pag. 37
PR01013	Pag. 18	PR01092	Pag. 20	PR01183	Pag. 33	PR01258	Pag. 18
PR01014	Pag. 18	PR01093	Pag. 20	PR01186	Pag. 33	PR01259	Pag. 30
PR01015	Pag. 19	PR01094	Pag. 21	PR01187	Pag. 33	PR01260	Pag. 36
PR01016	Pag. 20	PR01095	Pag. 21	PR01188	Pag. 35	PR01261	Pag. 18
PR01017	Pag. 19	PR01096	Pag. 20	PR01189	Pag. 35	PR01262	Pag. 36
PR01018	Pag. 18	PR01098	Pag. 21	PR01191	Pag. 35	PR01263	Pag. 38
PR01019	Pag. 18	PR01100	Pag. 19	PR01193	Pag. 35	PR01264	Pag. 38
PR01022	Pag. 29	PR01102	Pag. 21	PR01194	Pag. 35	PR01266	Pag. 30
PR01023	Pag. 20	PR01105	Pag. 21	PR01195	Pag. 35	PR01267	Pag. 38
PR01024	Pag. 18	PR01108	Pag. 21	PR01196	Pag. 35	PR01268	Pag. 23
PR01025	Pag. 20	PR01109	Pag. 21	PR01197	Pag. 36	PR01269	Pag. 35
PR01026	Pag. 20	PR01114	Pag. 23	PR01198	Pag. 36	PR01270	Pag. 21
PR01027	Pag. 20	PR01117	Pag. 23	PR01199	Pag. 36	PR01271	Pag. 29
PR01028	Pag. 29	PR01124	Pag. 23	PR01200	Pag. 20	PR01273	Pag. 27
PR01029	Pag. 19	PR01125	Pag. 23	PR01201	Pag. 36	PR01274	Pag. 29
PR01030	Pag. 19	PR01126	Pag. 45	PR01202	Pag. 36	PR01275	Pag. 21
PR01031	Pag. 30	PR01127	Pag. 45	PR01203	Pag. 37	PR01279	Pag. 32
PR01032	Pag. 29	PR01128	Pag. 46	PR01206	Pag. 37	PR01281	Pag. 31
PR01033	Pag. 29	PR01130	Pag. 18	PR01207	Pag. 37	PR01282	Pag. 35
PR01038	Pag. 29	PR01132	Pag. 46	PR01209	Pag. 37	PR01283	Pag. 32
PR01039	Pag. 18	PR01134	Pag. 46	PR01210	Pag. 37	PR01285	Pag. 21
PR01040	Pag. 30	PR01135	Pag. 46	PR01211	Pag. 37	PR01286	Pag. 31
PR01042	Pag. 30	PR01138	Pag. 45	PR01212	Pag. 37	PR01287	Pag. 30
PR01044	Pag. 31	PR01139	Pag. 45	PR01214	Pag. 37	PR01288	Pag. 27
PR01046	Pag. 31	PR01140	Pag. 45	PR01216	Pag. 38	PR01289	Pag. 38
PR01047	Pag. 18	PR01141	Pag. 45	PR01217	Pag. 38	PR01291	Pag. 27
PR01048	Pag. 19	PR01142	Pag. 45	PR01218	Pag. 38	PR01292	Pag. 34
PR01049	Pag. 19	PR01143	Pag. 45	PR01219	Pag. 38	PR01293	Pag. 33
PR01050	Pag. 18	PR01144	Pag. 45	PR01220	Pag. 38	PR01294	Pag. 34
PR01051	Pag. 19	PR01145	Pag. 45	PR01227	Pag. 34	PR01295	Pag. 29
PR01053	Pag. 19	PR01146	Pag. 45	PR01228	Pag. 34	PR01296	Pag. 27
PR01054	Pag. 21	PR01147	Pag. 31	PR01229	Pag. 34	PR01297	Pag. 27
PR01055	Pag. 21	PR01149	Pag. 33	PR01230	Pag. 33	PR01298	Pag. 27
PR01059	Pag. 23	PR01150	Pag. 37	PR01232	Pag. 33	PR01299	Pag. 25
PR01061	Pag. 23	PR01151	Pag. 37	PR01233	Pag. 33	PR01300	Pag. 25
PR01062	Pag. 23	PR01157	Pag. 36	PR01235	Pag. 33	PR01302	Pag. 25
PR01063	Pag. 23	PR01158	Pag. 36	PR01236	Pag. 33	PR01306	Pag. 27
PR01065	Pag. 20	PR01159	Pag. 36	PR01237	Pag. 34	PR01307	Pag. 27
PR01069	Pag. 20	PR01166	Pag. 31	PR01238	Pag. 34	PR01309	Pag. 36
PR01071	Pag. 20	PR01167	Pag. 31	PR01239	Pag. 34	PR01310	Pag. 35
PR01072	Pag. 45	PR01168	Pag. 31	PR01240	Pag. 34	PR01316	Pag. 31
PR01073	Pag. 29	PR01169	Pag. 31	PR01241	Pag. 34	PR01318	Pag. 31
PR01075	Pag. 29	PR01170	Pag. 32	PR01248	Pag. 32	PR01323	Pag. 37
PR01076	Pag. 30	PR01171	Pag. 31	PR01249	Pag. 46	PR01325	Pag. 35
PR01077	Pag. 30	PR01173	Pag. 32	PR01250	Pag. 29	PR01329	Pag. 27
PR01079	Pag. 32	PR01174	Pag. 32	PR01251	Pag. 29	PR01331	Pag. 31
PR01080	Pag. 30	PR01175	Pag. 32	PR01252	Pag. 19	PR01332	Pag. 32
PR01082	Pag. 30	PR01177	Pag. 32	PR01254	Pag. 25	PR01333	Pag. 31

PRI1001	Pag. 40	PRI1009B	Pag. 42	PRI1020	Pag. 40	PRI1033	Pag. 42
PRI1002	Pag. 41	PRI1010A	Pag. 42	PRI1021	Pag. 40	PRI1033A	Pag. 42
PRI1002D	Pag. 41	PRI1010B	Pag. 42	PRI1022	Pag. 40	PRI1033B	Pag. 42
PRI1003	Pag. 42	PRI1011A	Pag. 42	PRI1024	Pag. 42	PRI1034	Pag. 41
PRI1003 C	Pag. 43	PRI1011B	Pag. 42	PRI1025A	Pag. 42	PRI1035	Pag. 41
PRI1003D	Pag. 42	PRI1012	Pag. 41	PRI1025B	Pag. 42	PRI1036 DX	Pag. 41
PRI1004	Pag. 42	PRI1013	Pag. 42	PRI1026	Pag. 40	PRI1036 SX	Pag. 41
PRI1005	Pag. 40	PRI1014 AB	Pag. 40	PRI1027	Pag. 41	PRI1038	Pag. 43
PRI1006	Pag. 40	PRI1016	Pag. 41	PRI1028A	Pag. 40	PRI1039 A	Pag. 43
PRI1007A	Pag. 40	PRI1017A	Pag. 41	PRI1028B	Pag. 40	PRI1039 B	Pag. 43
PRI1007B	Pag. 40	PRI1017B	Pag. 41	PRI1029	Pag. 40	PRI1040	Pag. 40
PRI1008A	Pag. 41	PRI1018	Pag. 41	PRI1030	Pag. 40	PRI1041 A	Pag. 40
PRI1008B	Pag. 41	PRI1019A	Pag. 41	PRI1031	Pag. 42	PRI1041 B	Pag. 40
PRI1009A	Pag. 42	PRI1019B	Pag. 41	PRI1032	Pag. 40		

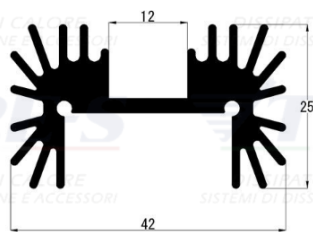
PROFILES FOR LOW AND MEDIUM POWER

Heat sinks for low and medium power applications are characterized by fins of various structures and sizes, with a flat area on which to place the components.



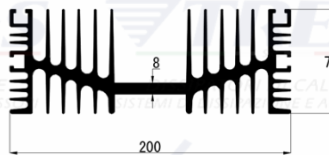
The application sectors include:

- ✓ **Welding industry (welding sector)**
- ✓ **Renewable energy industry**
- ✓ **LED technology industry**
- ✓ **Electromedical sector industry**



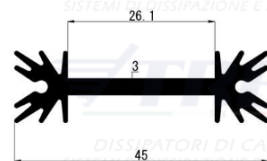
PRO1261

PESO: 0.93 kg/m



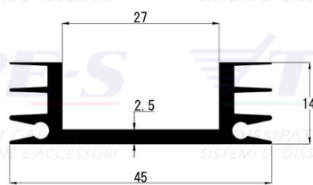
PRO1130

PESO: 11.22 kg/m



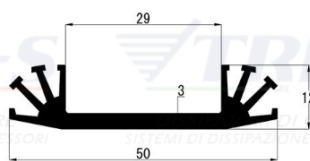
PRO1039

PESO: 0.56 kg/m



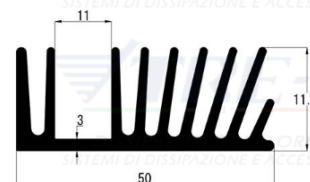
PRO1018

PESO: 0.56 kg/m



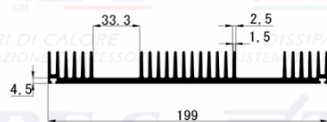
PRO1003

PESO: 0.56 kg/m



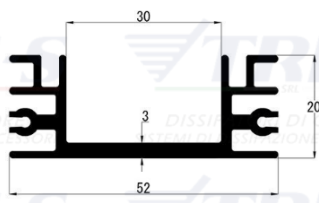
PRO1050

PESO: 1.08 kg/m



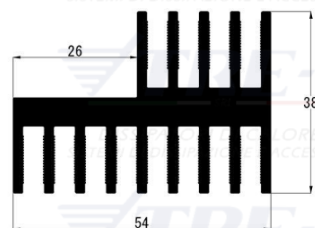
PRO1258

PESO: 4.79 kg/m



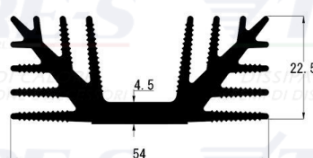
PRO1019

PESO: 0.80 kg/m



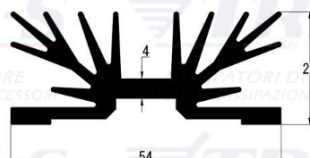
PRO1024

PESO: 2.20 kg/m



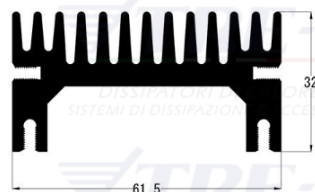
PRO1014

PESO: 1.33 kg/m



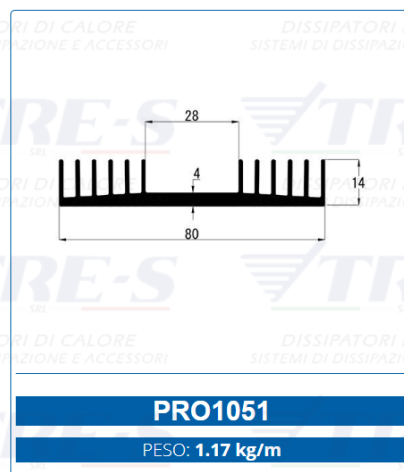
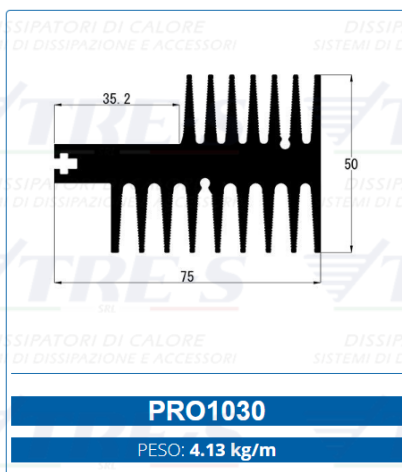
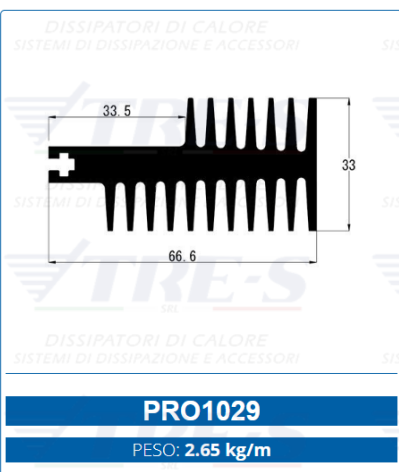
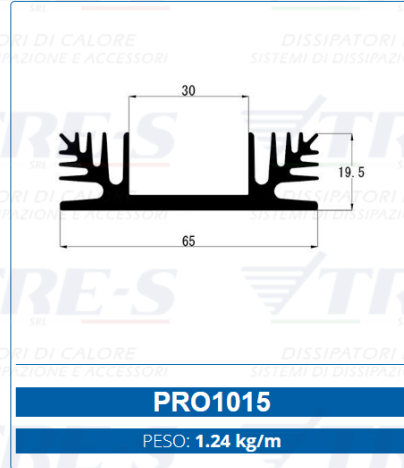
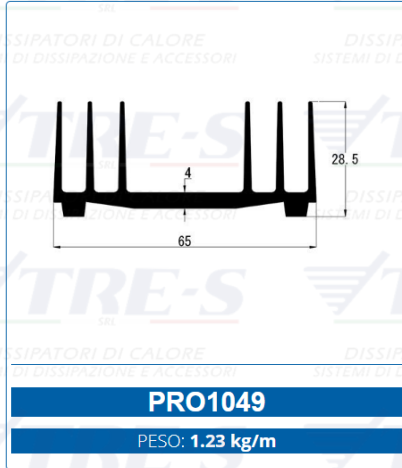
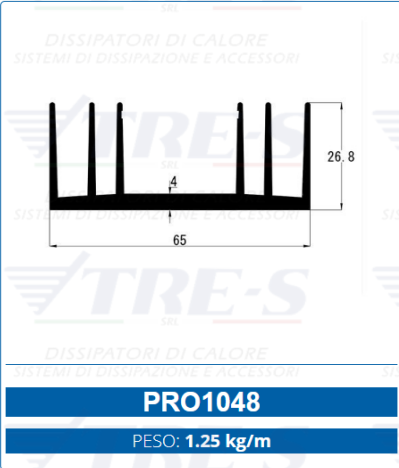
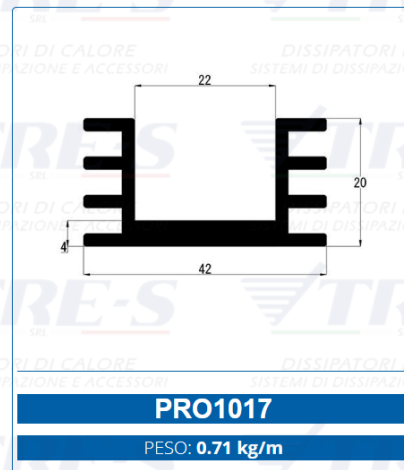
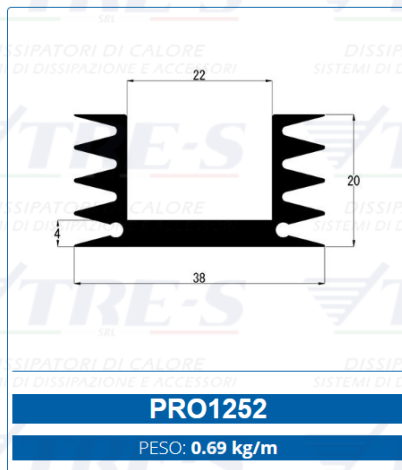
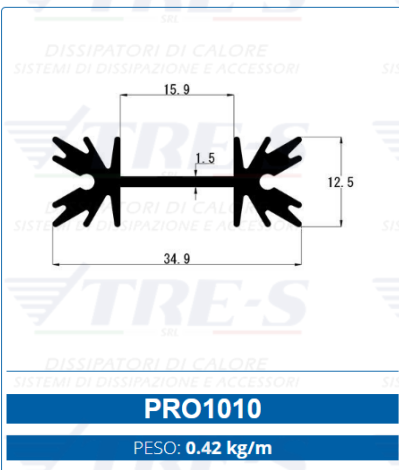
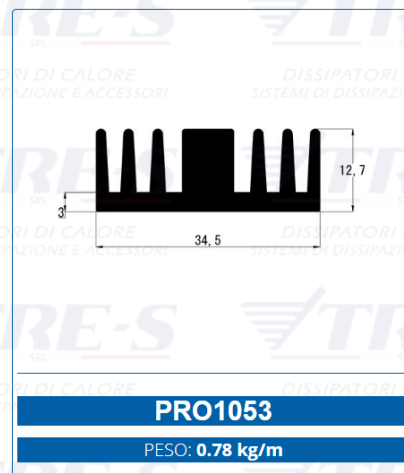
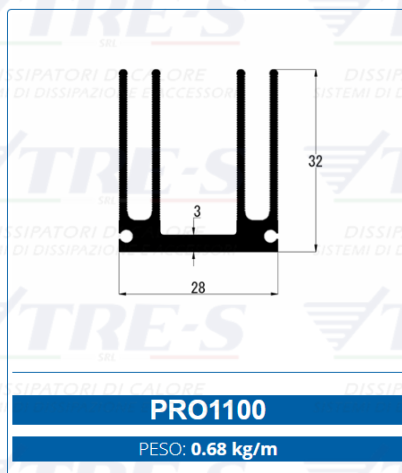
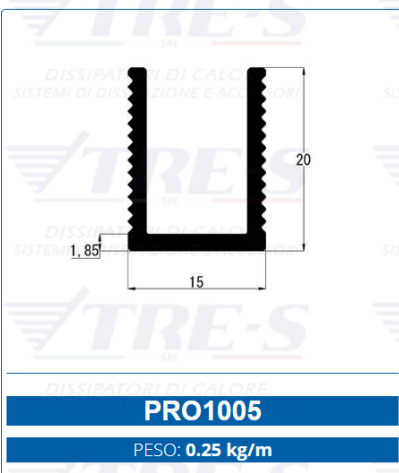
PRO1013

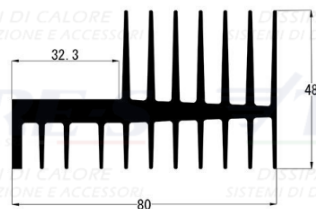
PESO: 1.25 kg/m



PRO1047

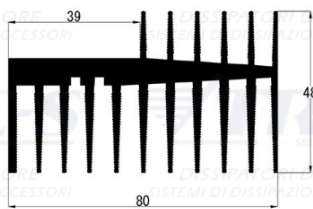
PESO: 2.37 kg/m





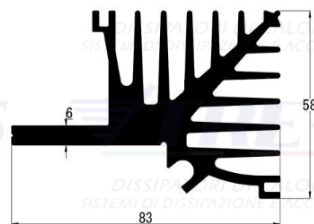
PRO1023

PESO: 2.80 kg/m



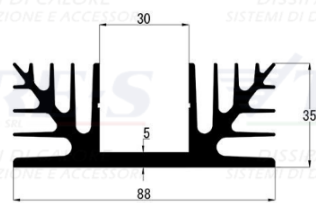
PRO1069

PESO: 3.28 kg/m



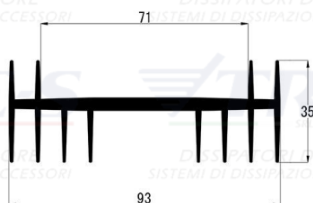
PRO1071

PESO: 4.00 kg/m



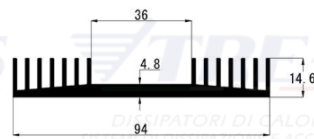
PRO1025

PESO: 2.77 kg/m



PRO1096

PESO: 1.80 kg/m



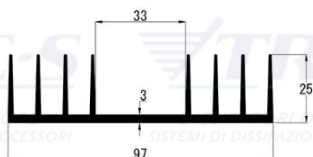
PRO1092

PESO: 1.61 kg/m



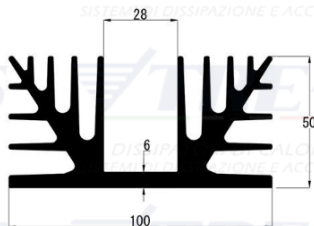
PRO1200

PESO: 1.28 kg/m



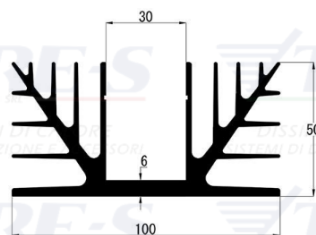
PRO1093

PESO: 1.49 kg/m



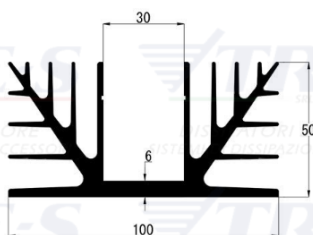
PRO1027P

PESO: 5.16 kg/m



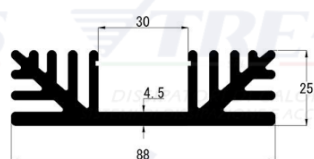
PRO1265M

PESO: 4.20 kg/m



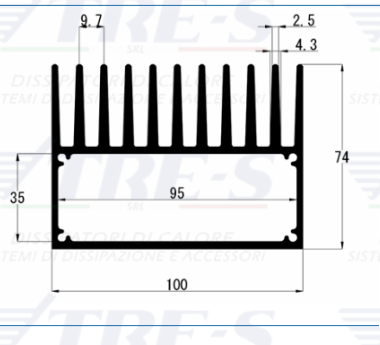
PRO1026L

PESO: 3.66 kg/m



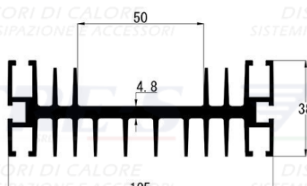
PRO1016

PESO: 2.83 kg/m



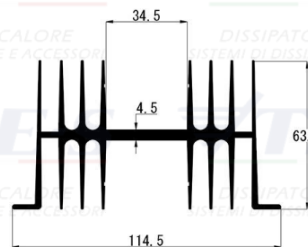
PRO1270

PESO: 5.33 kg/m



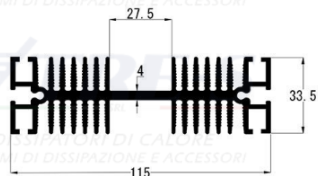
PRO1098

PESO: 2.72 kg/m



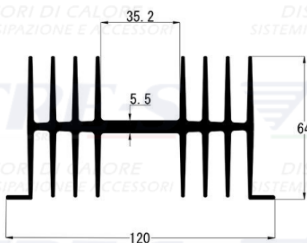
PRO1105

PESO: 3.46 kg/m



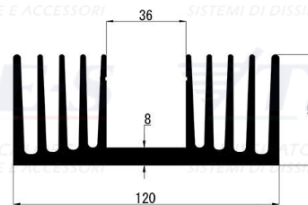
PRO1102

PESO: 3.65 kg/m



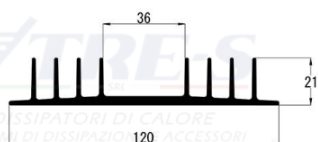
PRO1108

PESO: 4.14 kg/m



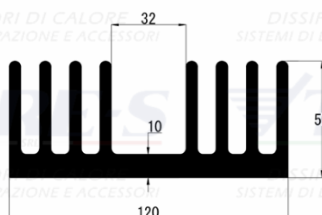
PRO1055

PESO: 6.13 kg/m



PRO1094

PESO: 1.73 kg/m



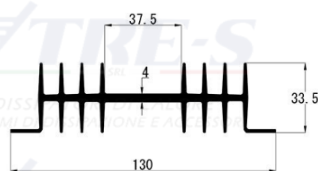
PRO1095

PESO: 7.55 kg/m



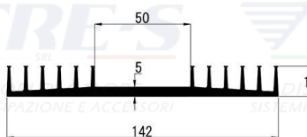
PRO1285

PESO: 1.24 kg/m



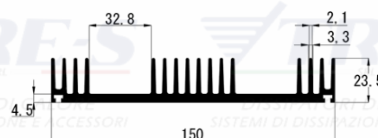
PRO1109

PESO: 2.34 kg/m



PRO1054

PESO: 2.19 kg/m

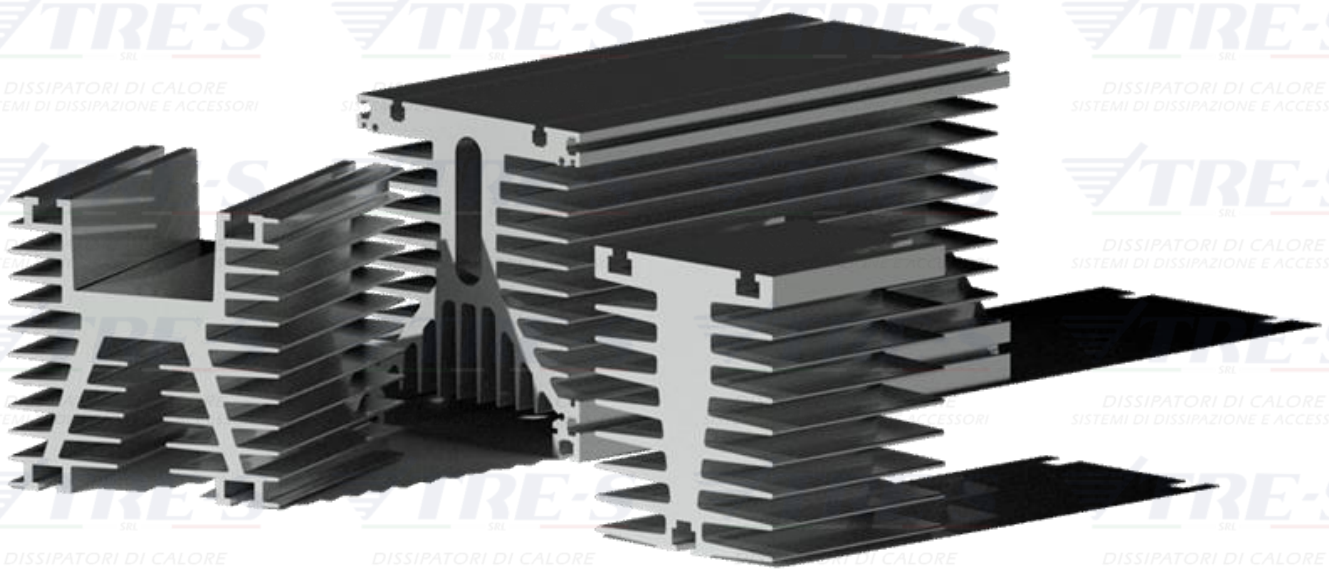


PRO1275

PESO: 3.09 kg/m

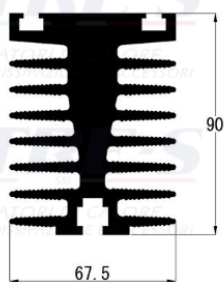
PROFILES FOR SCREW ATTACHMENT DEVICES

High thermal inertia profiles for devices with high heat dissipation capacity. These heat sinks are used with a screw guide rail, which allows for easier installation on the structure.



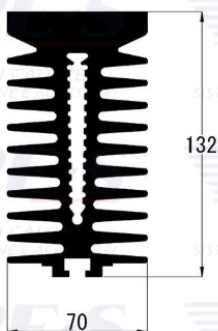
The application sectors include:

- ✓ **The application sectors include:**
- ✓ **Welding industry**
- ✓ **Uninterruptible Power Supply (UPS) industry**
- ✓ **Automotive industry**
- ✓ **Traction and braking industry**



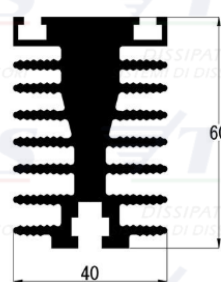
PRO1063

PESO: 8.29 kg/m



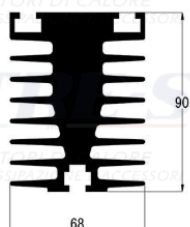
PRO1059

PESO: 13.41 kg/m



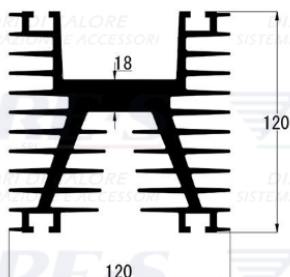
PRO1061

PESO: 2.26 kg/m



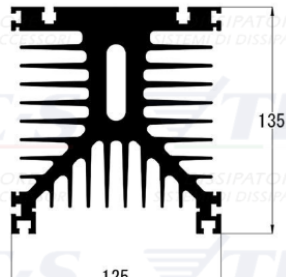
PRO1062

PESO: 8.64 kg/m



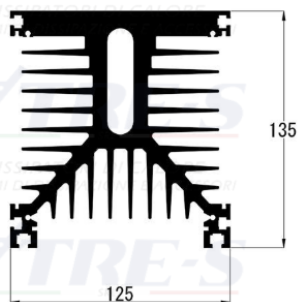
PRO1117

PESO: 11.18 kg/m



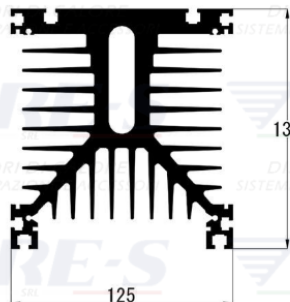
PRO1124P

PESO: 17.59 kg/m



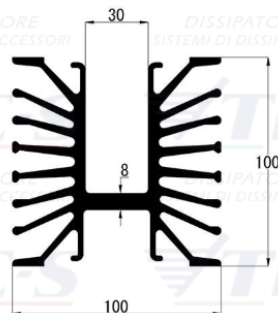
PRO1268

PESO: 15.34 kg/m



PRO1125L

PESO: 15.64 kg/m

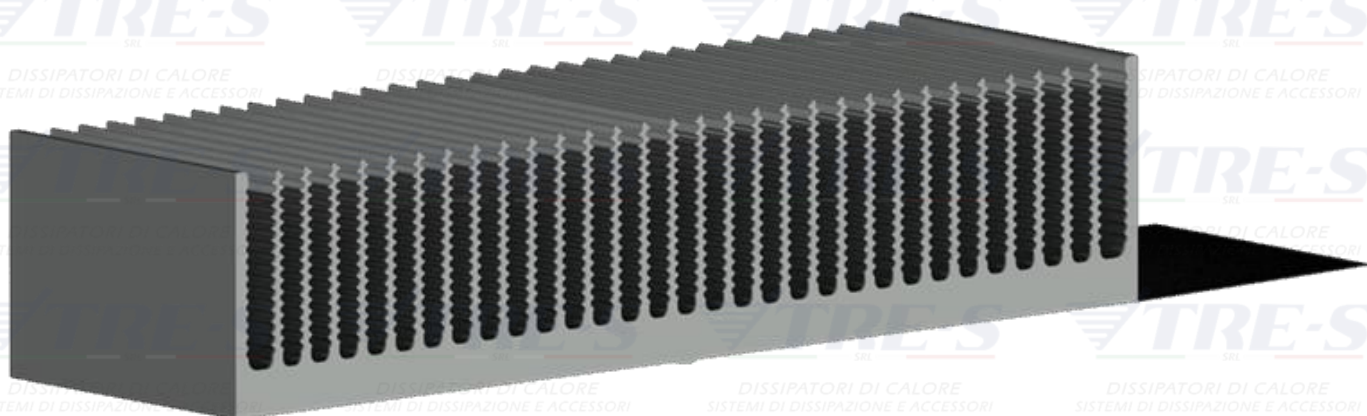


PRO1114

PESO: 7.66 kg/m

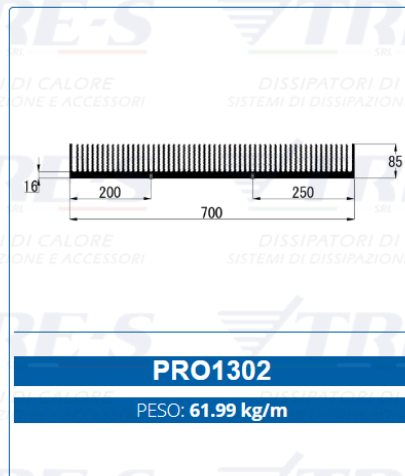
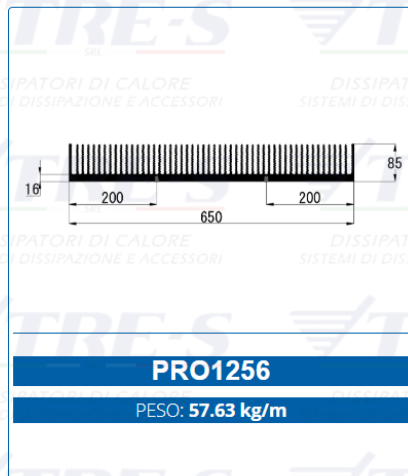
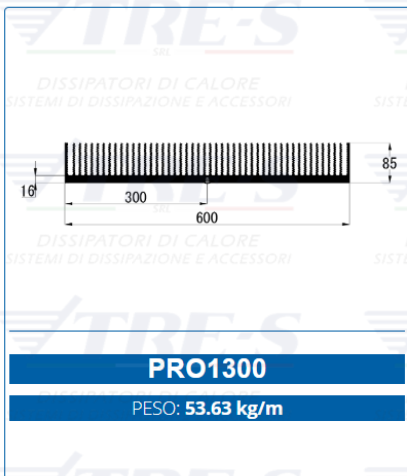
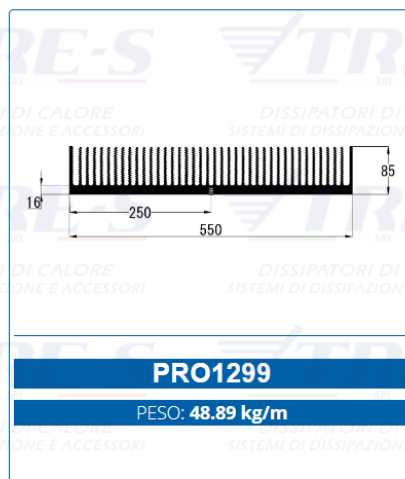
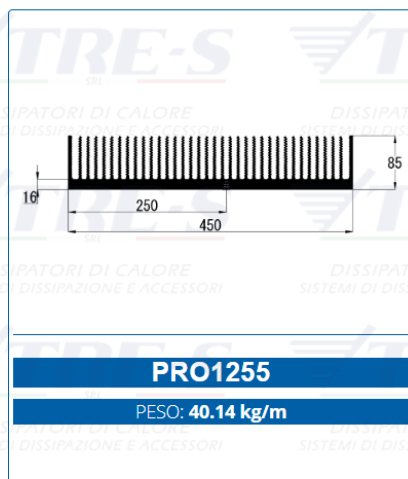
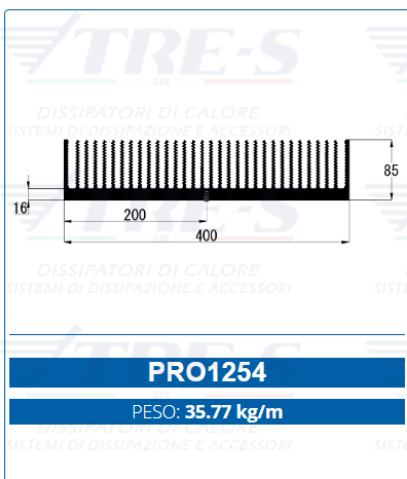
LARGE WELDED HEATSINKS

Large welded heat sinks are used to achieve a profile that would not be possible to extrude with current technologies.



The application sectors include:

- ✓ **Uninterruptible Power Supply (UPS) industry**
- ✓ **Automotive industry**
- ✓ **Traction and braking industry**



HEATSINKS WITH CLIP SYSTEM

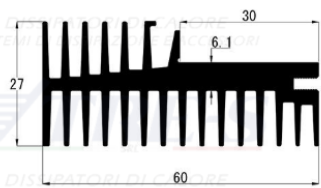
BREVETTO N° VI2008A000295

Heat sinks equipped with an elastic element for securing the components attached to it. The advantage of this system is evident, as it ensures effective fastening of the components using a quick attachment device composed of a sheet made of elastically deformable material that does not require special processing.



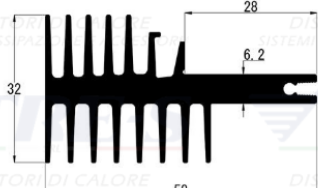
Application sectors:

- ✓ **Welding industry**
- ✓ **Renewable energy industry**
- ✓ **LED technology industry**
- ✓ **Electromedical sector industry**



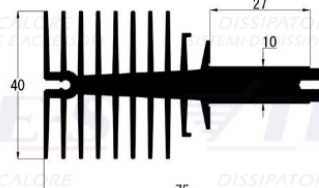
PRO1288

PESO: 1.76 kg/m



PRO1291

PESO: 2.65 kg/m



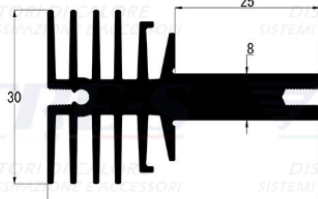
PRO1296

PESO: 2.51 kg/m



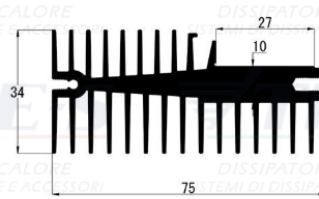
PRO1297

PESO: 1.68 kg/m



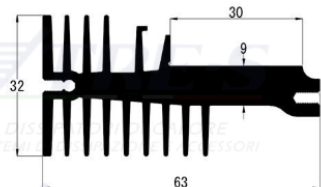
PRO1298

PESO: 1.25 kg/m



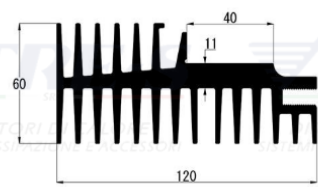
PRO1306

PESO: 2.50 kg/m



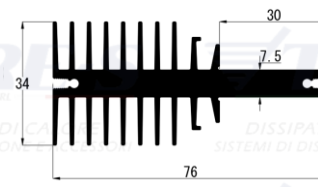
PRO1307

PESO: 2.00 kg/m



PRO1273

PESO: 1.65 kg/m



PRO1329

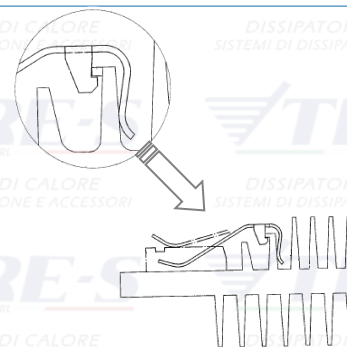
PESO: 2.28 kg/m



PRM001



PRM002



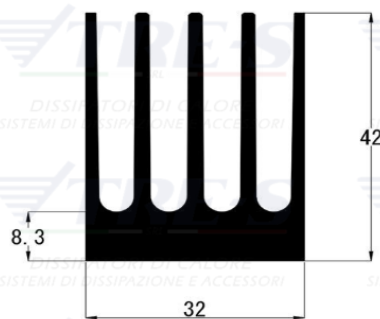
HEATSINKS FOR POWER MODULES

Heat sinks for power modules characterized by fins and a flat area on which to place the components.



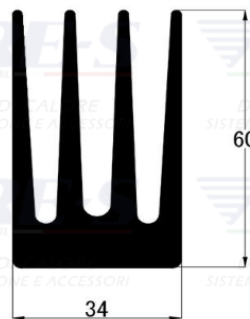
Application sectors:

- ✓ **Uninterruptible Power Supply (UPS) industry**
- ✓ **Automotive industry**
- ✓ **Traction and braking industry**



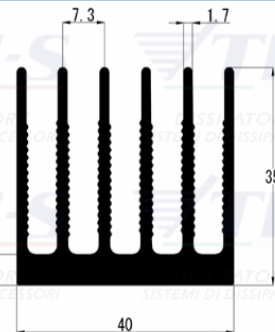
PRO1274

PESO: 1.95 kg/m



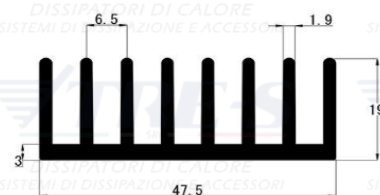
PRO1033

PESO: 2.84 kg/m



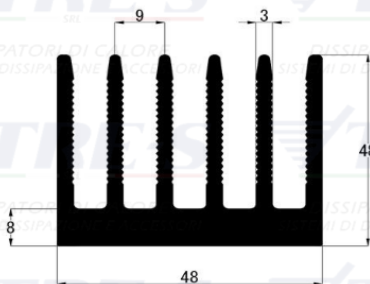
PRO1251

PESO: 2.35 kg/m



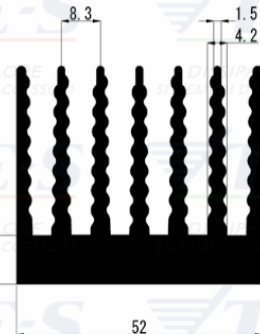
PRO1038

PESO: 1.07 kg/m



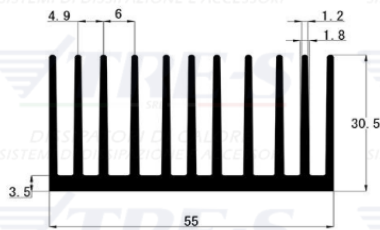
PRO1250

PESO: 2.44 kg/m



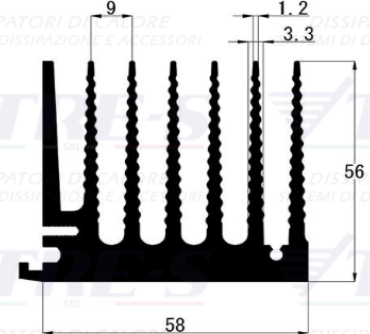
PRO1271

PESO: 2.60 kg/m



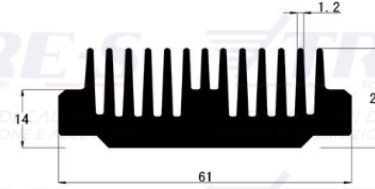
PRO1073

PESO: 1.71 kg/m



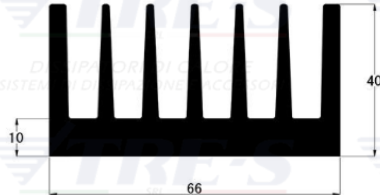
PRO1295

PESO: 3.74 kg/m



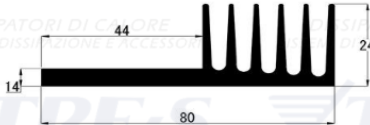
PRO1028

PESO: 2.23 kg/m



PRO1075

PESO: 3.47 kg/m



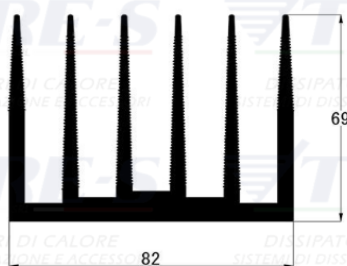
PRO1022

PESO: 1.79 kg/m



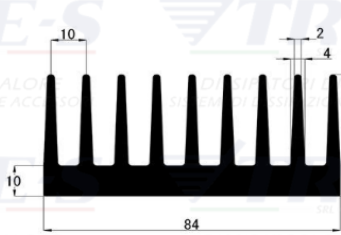
PRO1032

PESO: 2.87 kg/m



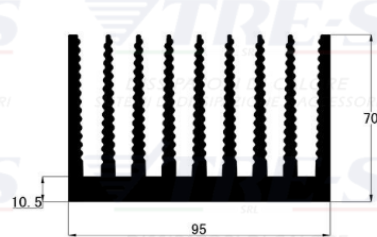
PRO1076

PESO: 4.95 kg/m

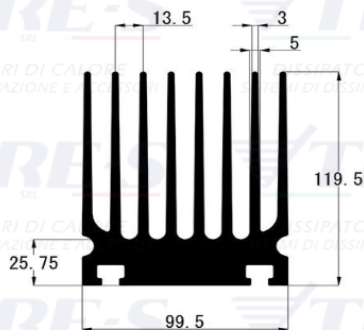


PRO1077

PESO: 4.43 kg/m

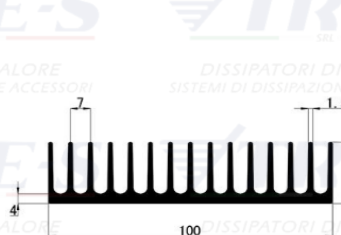


PRO1280



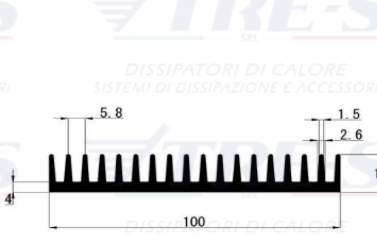
PRO1042

PESO: 14.44 kg/m



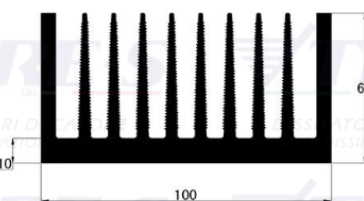
PRO1084

PESO: 2.68 kg/m



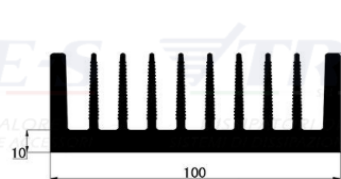
PRO1083

PESO: 2.16 kg/m



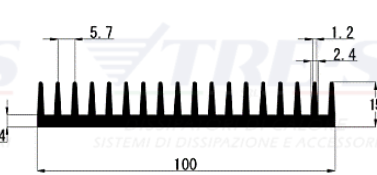
PRO1040

PESO: 7.48 kg/m



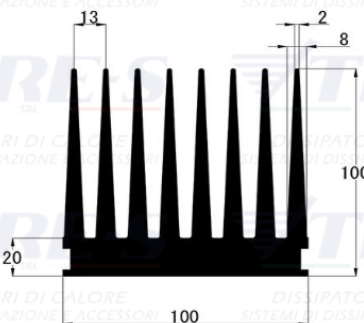
PRO1031

PESO: 5.02 kg/m



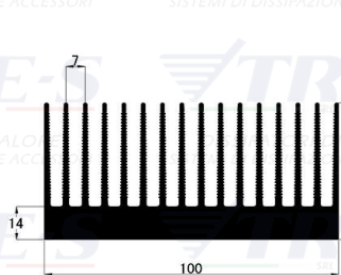
PRO1082

PESO: 2.02 kg/m



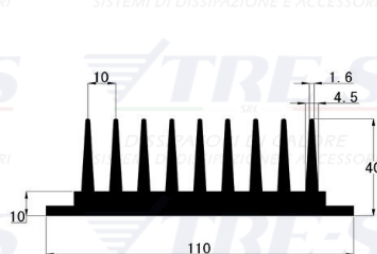
PRO1259

PESO: 13.88 kg/m



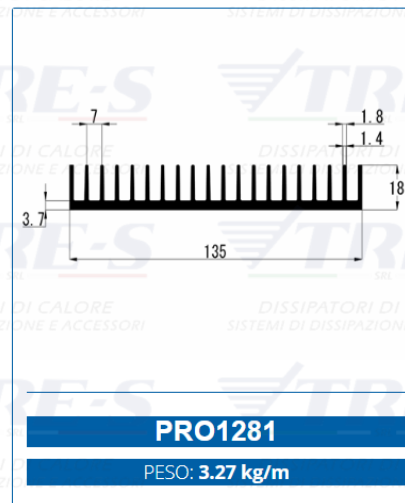
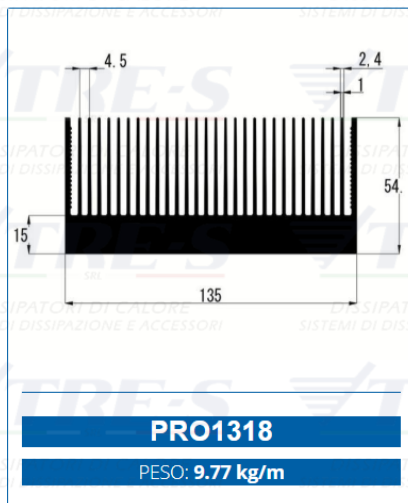
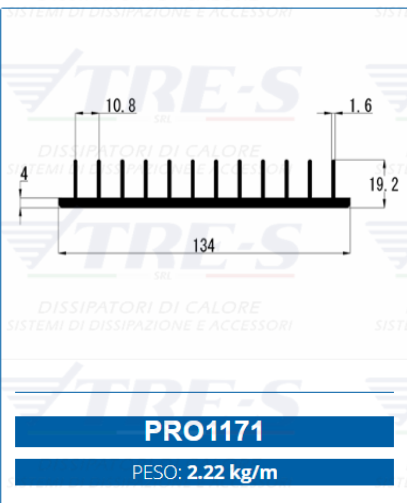
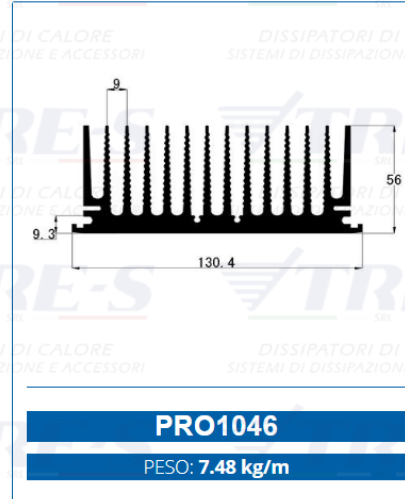
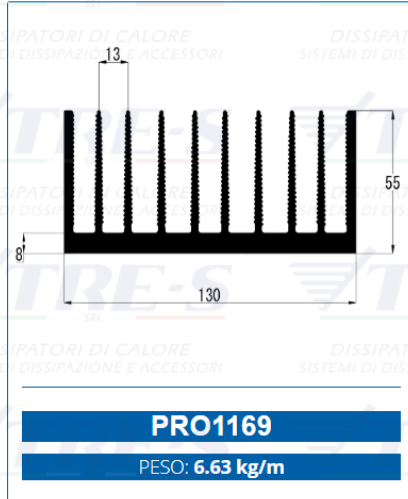
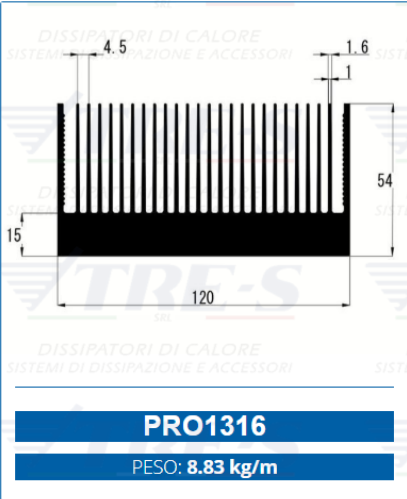
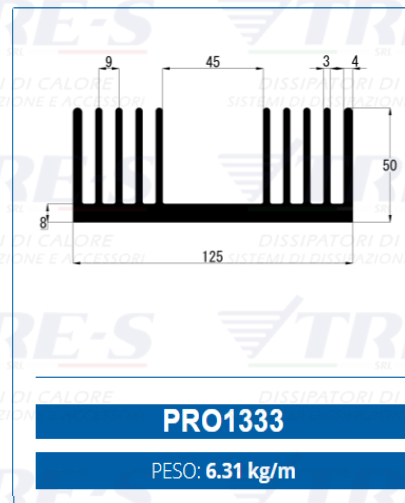
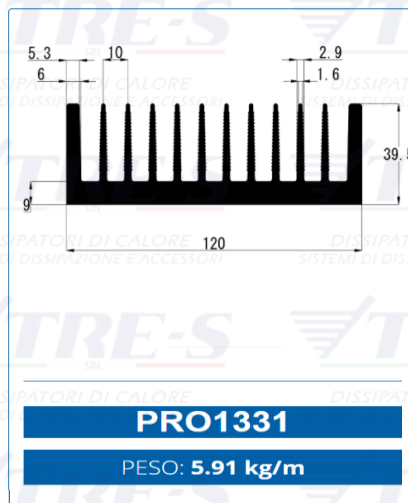
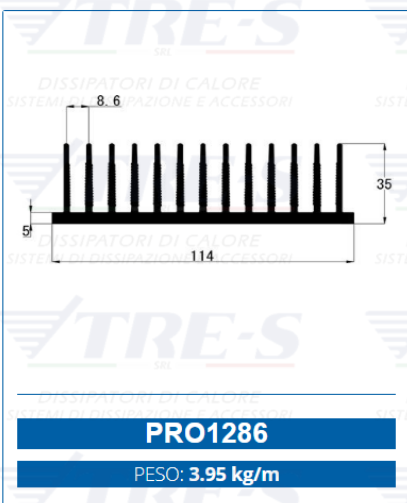
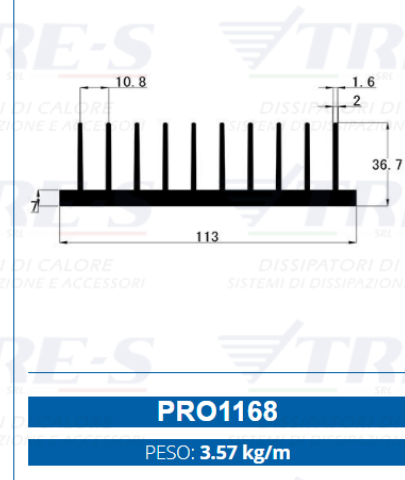
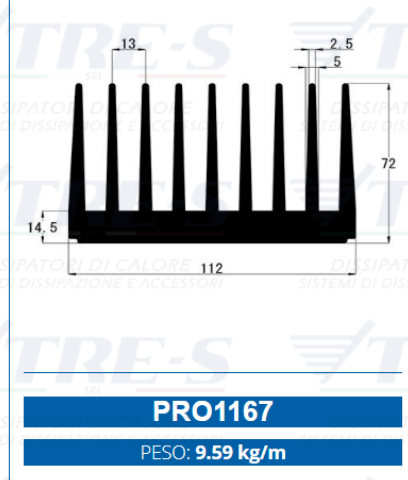
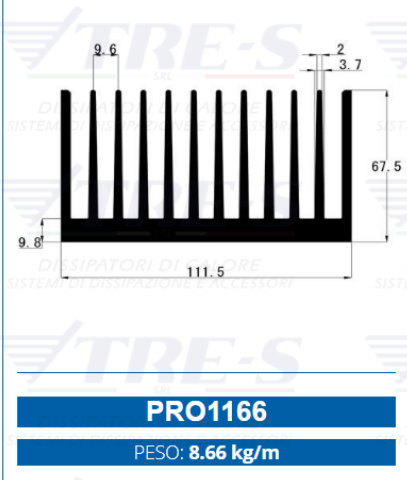
PRO1287

PESO: 7.67 kg/m



PRO1266

PESO: 4.95 kg/m





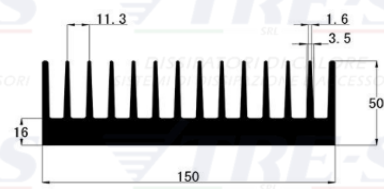
PRO1248

PESO: 3.27 kg/m



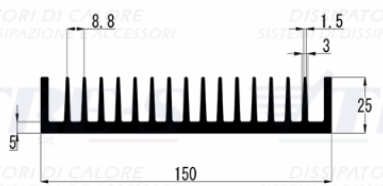
PRO1170

PESO: 7.29 kg/m



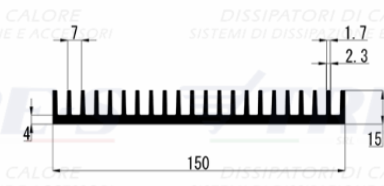
PRO1321

PESO: 9.58 kg/m



PRO1173

PESO: 4.33 kg/m



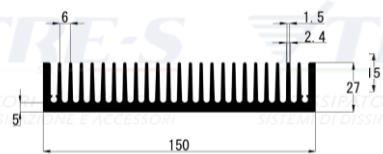
PRO1279

PESO: 2.94 kg/m



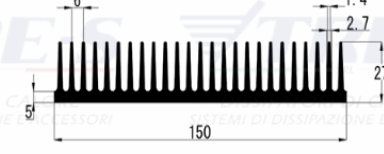
PRO1079

PESO: 7.85 kg/m



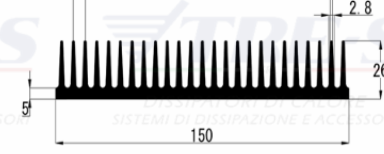
PRO1283

PESO: 5.28 kg/m



PRO1177

PESO: 5.16 kg/m



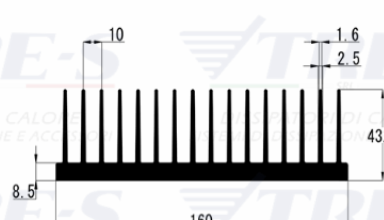
PRO1175

PESO: 4.98 kg/m



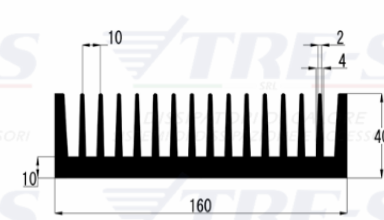
PRO1332

PESO: 10.30 kg/m



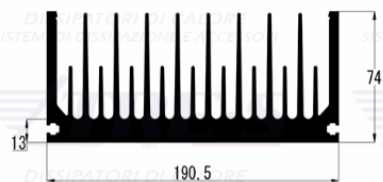
PRO1179

PESO: 6.75 kg/m



PRO1178

PESO: 8.64 kg/m



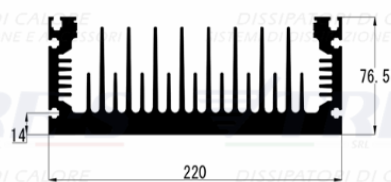
PRO1233

PESO: 14.84 kg/m



PRO1236A

PESO: 18.79 kg/m



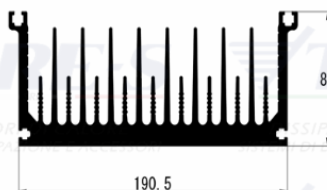
PRO1235

PESO: 17.52 kg/m



PRO1236B

PESO: 21.47 kg/m



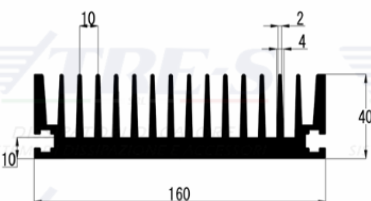
PRO1230

PESO: 14.94 kg/m



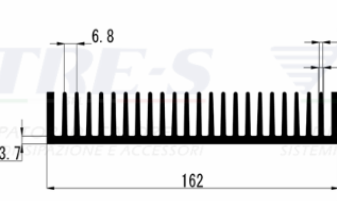
PRO1232

PESO: 18.97 kg/m



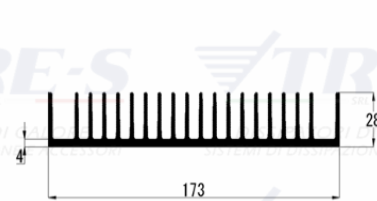
PRO1149

PESO: 8.41 kg/m



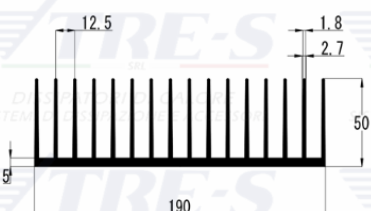
PRO1181

PESO: 5.09 kg/m



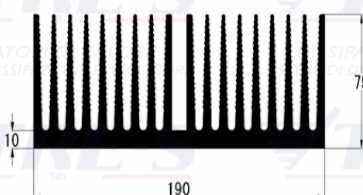
PRO1183

PESO: 4.72 kg/m



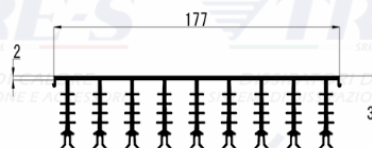
PRO1186

PESO: 6.90 kg/m



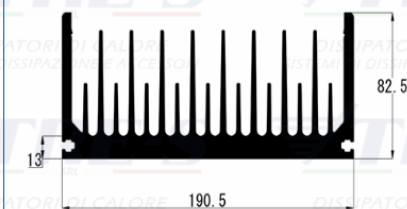
PRO1187

PESO: 17.89 kg/m



PRO1293

PESO: 3.35 kg/m



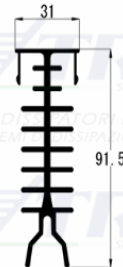
PRO1292

PESO: 14.84 kg/m



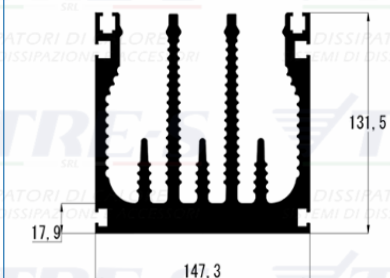
PRO1294

PESO: 18.79 kg/m



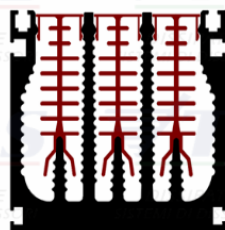
PRO1240

PESO: 1.87 kg/m



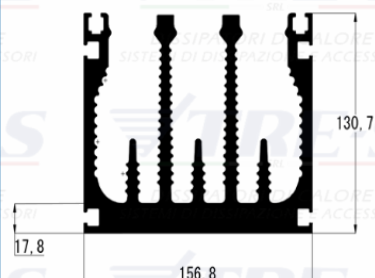
PRO1237

PESO: 17.42 kg/m



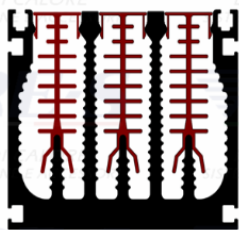
PRO1241A

PESO: 23.02 kg/m



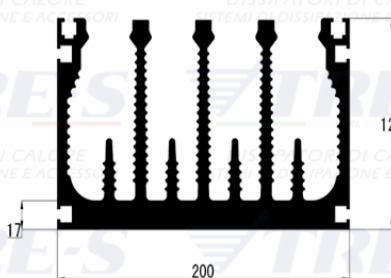
PRO1238

PESO: 18.15 kg/m



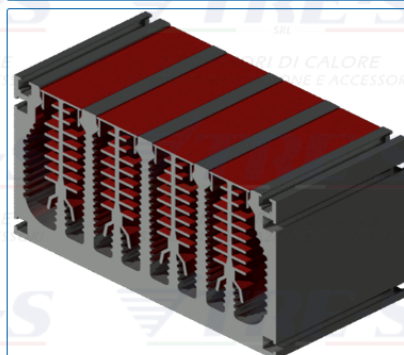
PRO1241B

PESO: 23.75 kg/m



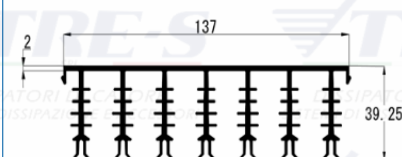
PRO1239

PESO: 23.60 kg/m



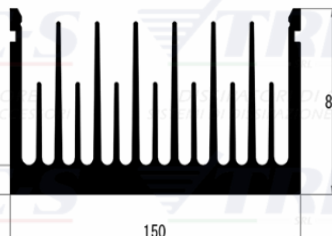
PRO1241C

PESO: 31.07 kg/m



PRO1228

PESO: 3.07 kg/m



PRO1227

PESO: 12.36 kg/m



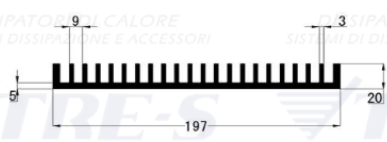
PRO1229

PESO: 15.43 kg/m



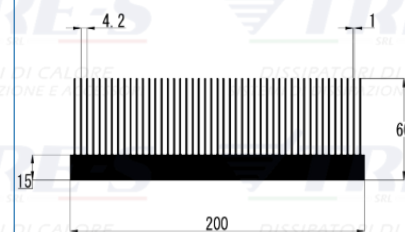
PRO1188

PESO: 5.09 kg/m



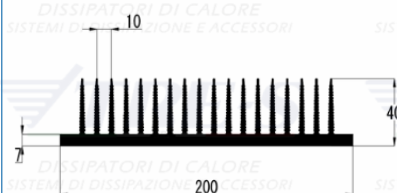
PRO1189

PESO: 5.49 kg/m



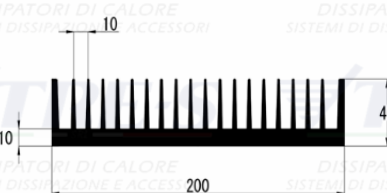
PRO1325

PESO: 13.88 kg/m



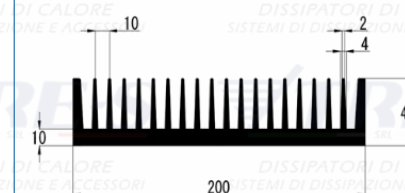
PRO1310

PESO: 7.81 kg/m



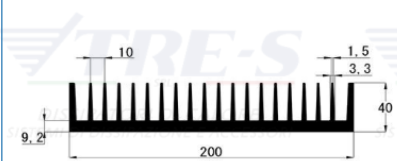
PRO1196

PESO: 10.83 kg/m



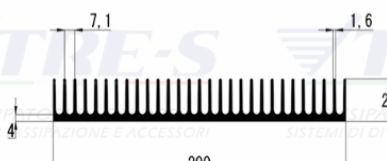
PRO1195

PESO: 10.68 kg/m



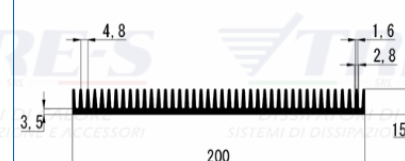
PRO1194

PESO: 9.25 kg/m



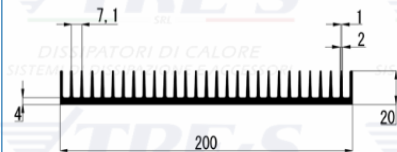
PRO1193

PESO: 5.38 kg/m



PRO1085

PESO: 4.73 kg/m



PRO1269

PESO: 4.11 kg/m



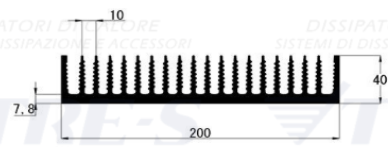
PRO1191

PESO: 3.90 kg/m



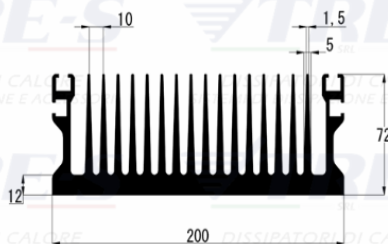
PRO1282

PESO: 2.81 kg/m



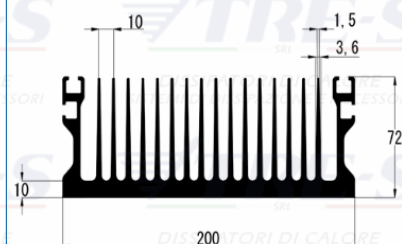
PRO1309

PESO: 9.61 kg/m



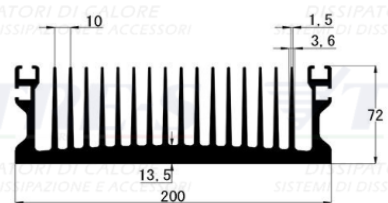
PRO1158

PESO: 17.32 kg/m



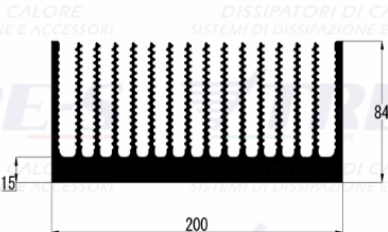
PRO1157

PESO: 14.68 kg/m



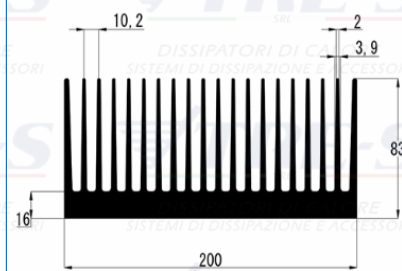
PRO1260

PESO: 14.86 kg/m



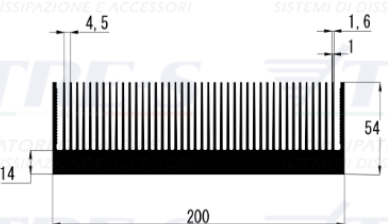
PRO1262

PESO: 17.73 kg/m



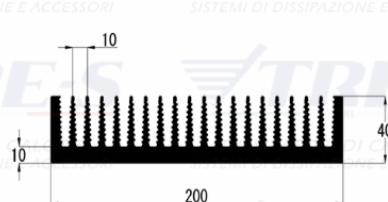
PRO1198

PESO: 19.40 kg/m



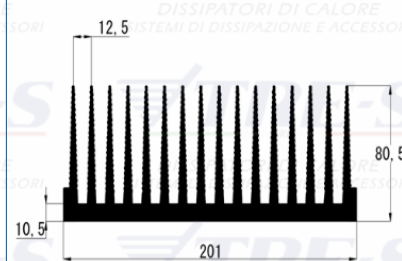
PRO1319

PESO: 14.85 kg/m



PRO1197

PESO: 11.15 kg/m



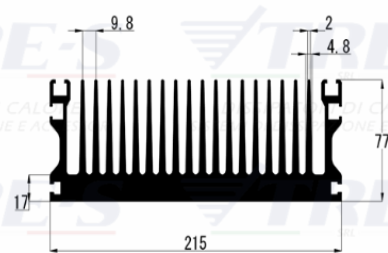
PRO1199

PESO: 17.40 kg/m



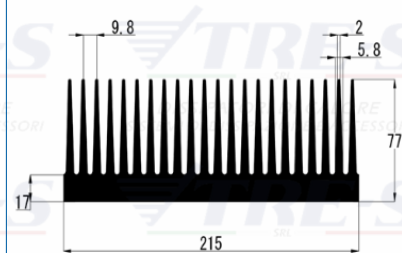
PRO1201

PESO: 20.31 kg/m



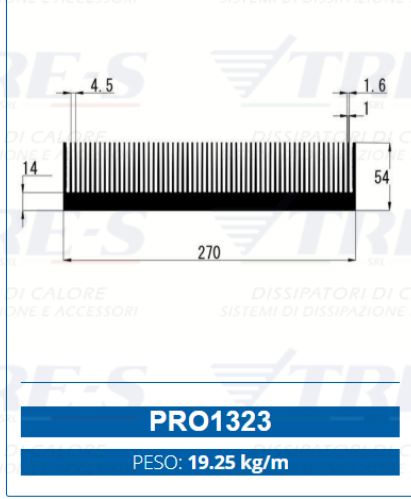
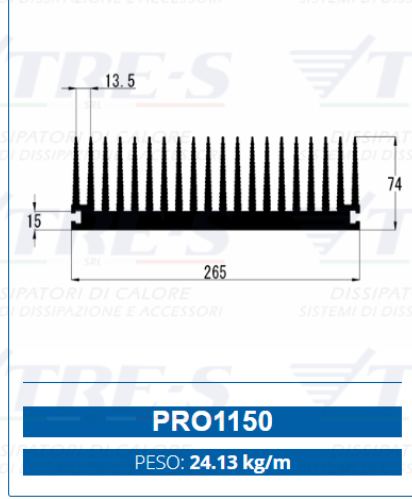
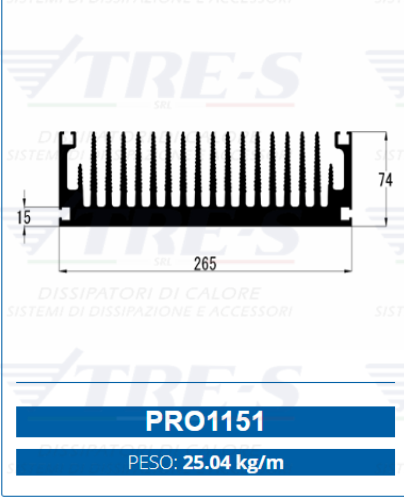
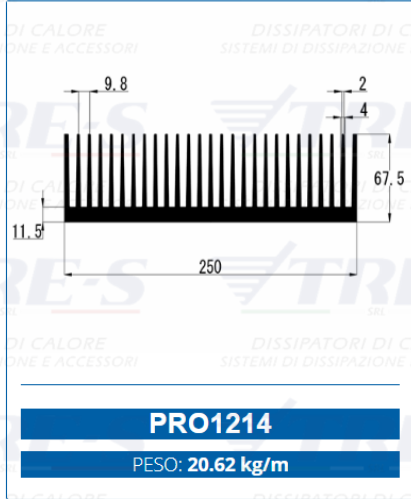
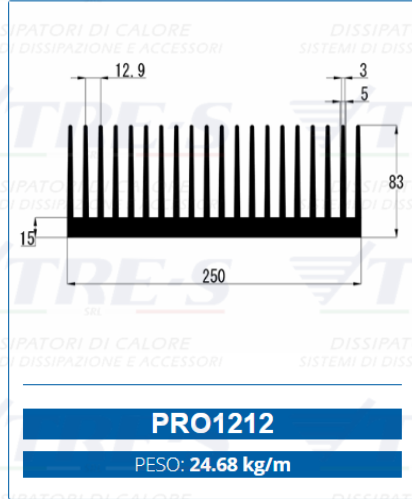
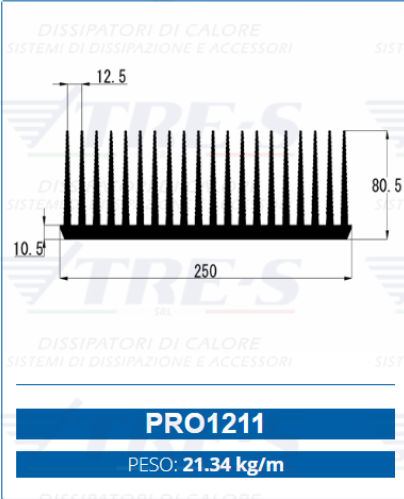
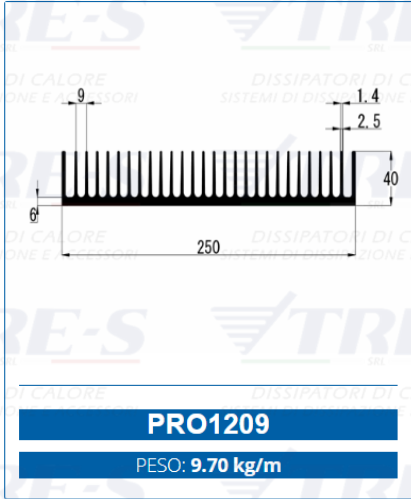
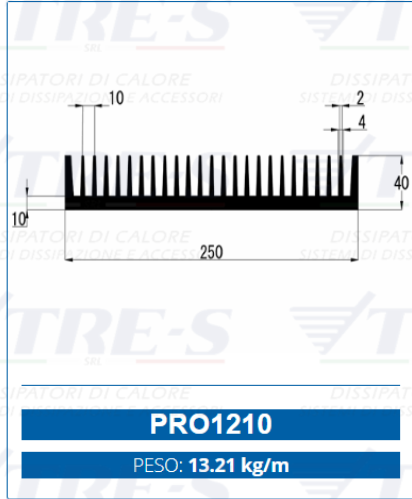
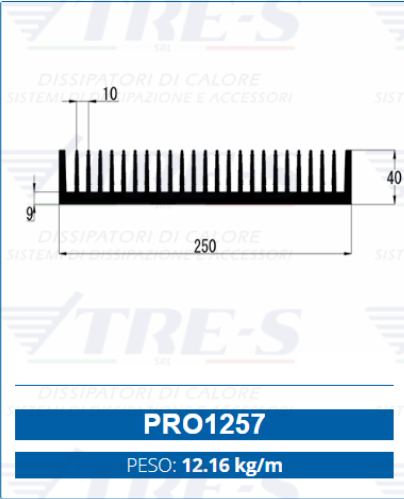
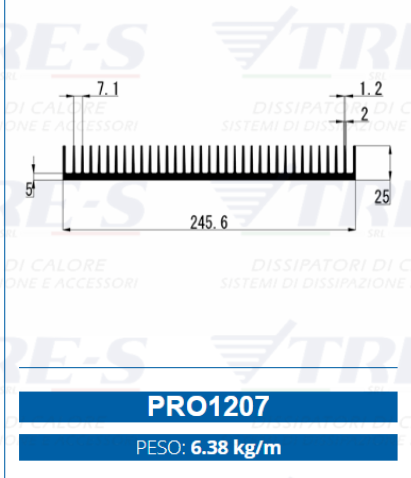
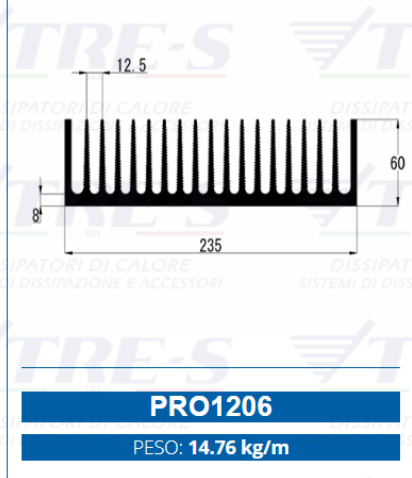
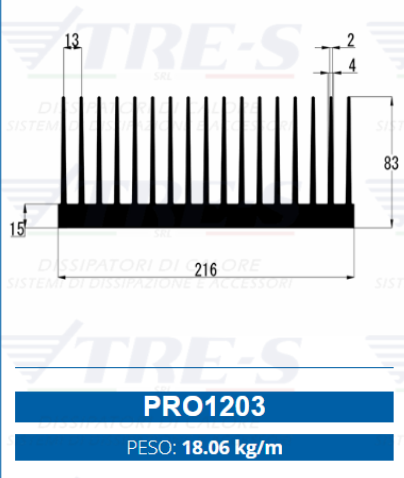
PRO1159

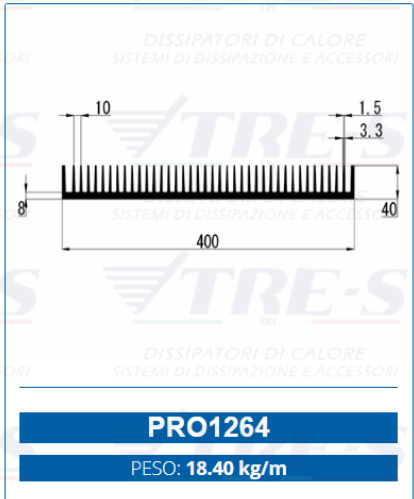
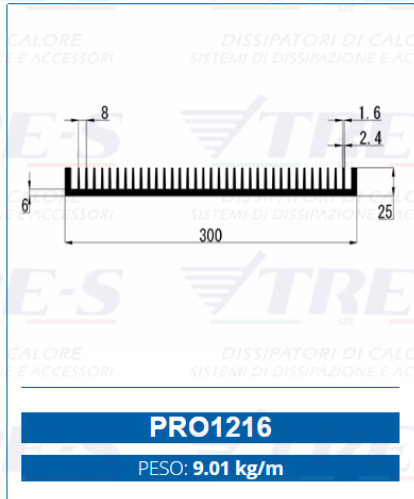
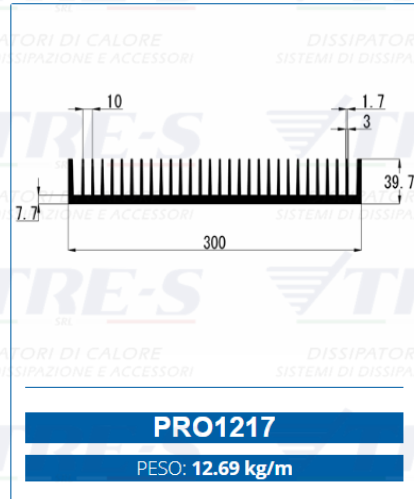
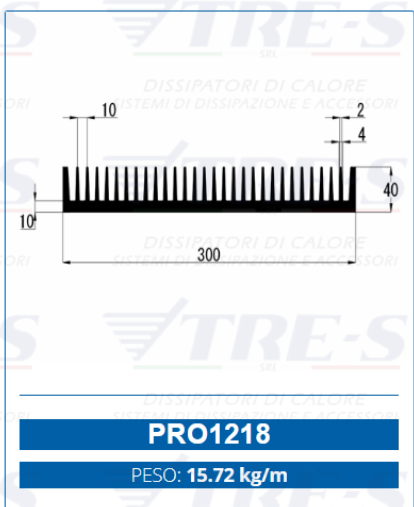
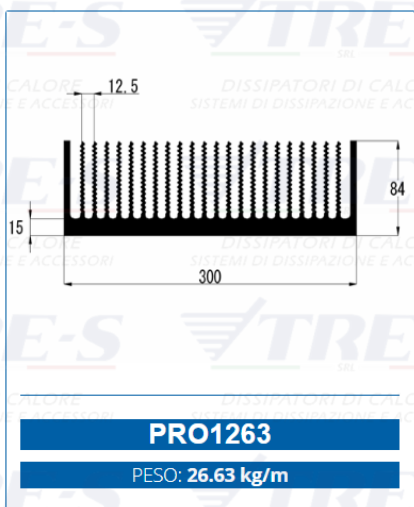
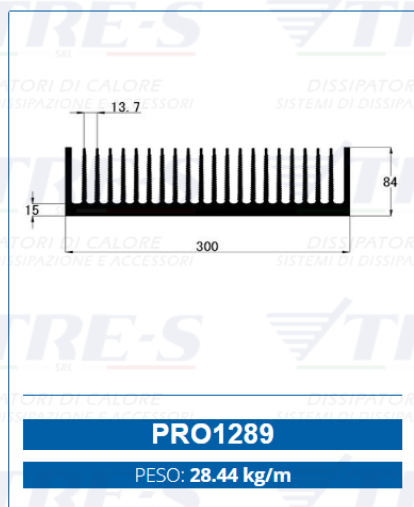
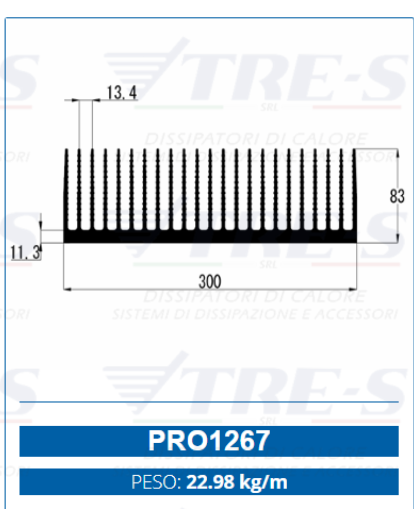
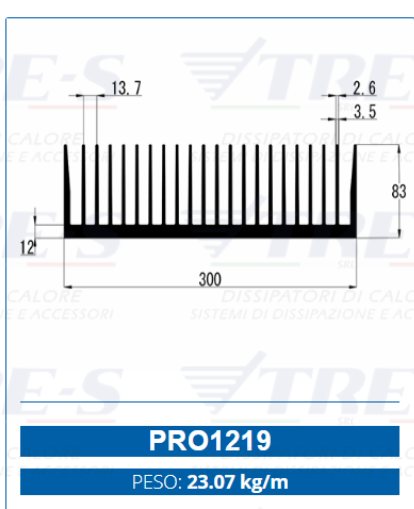
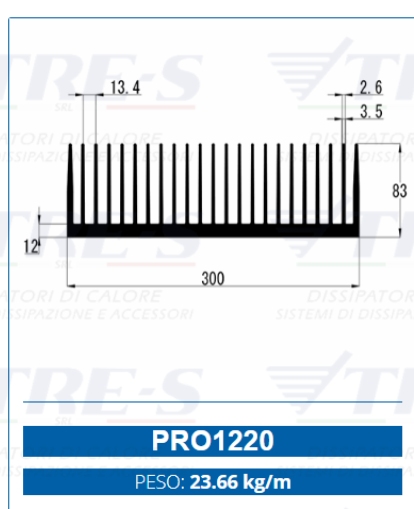
PESO: 21.86 kg/m



PRO1202

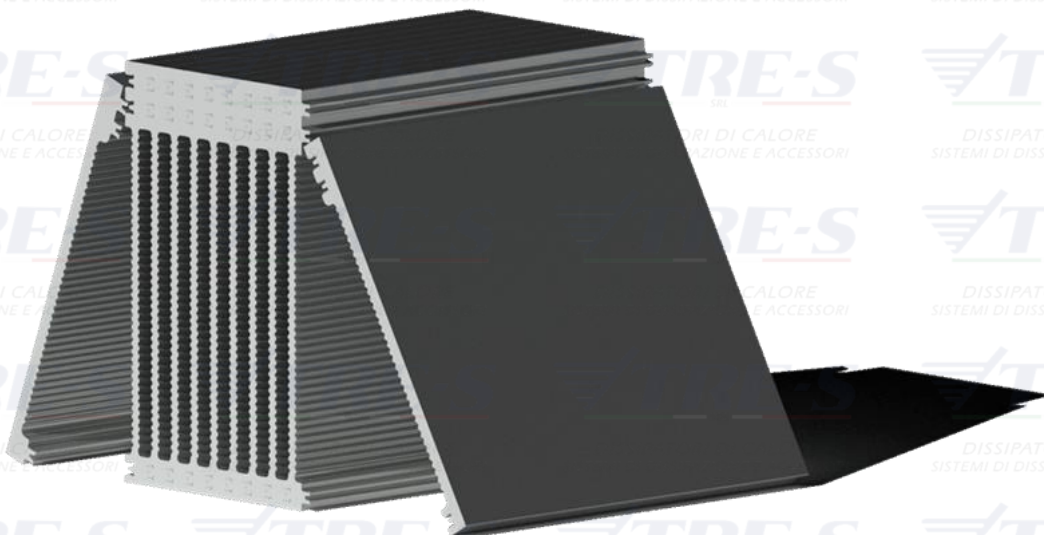
PESO: 20.31 kg/m





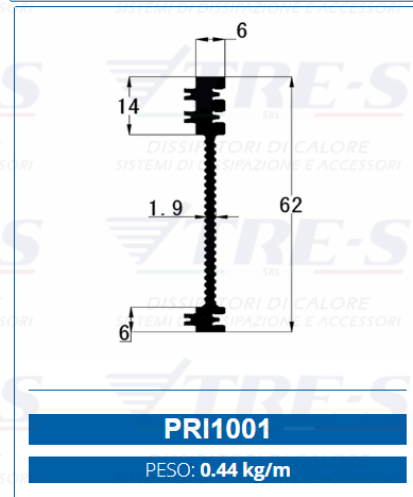
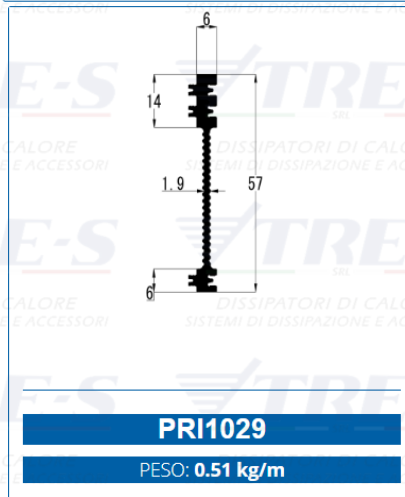
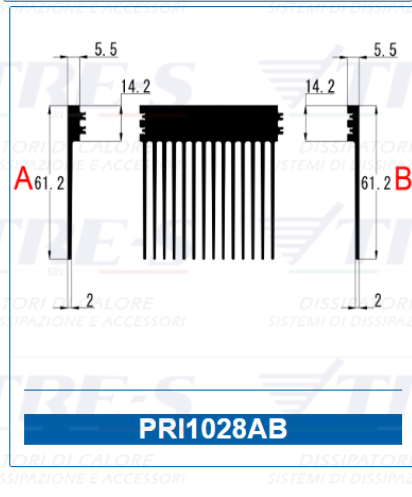
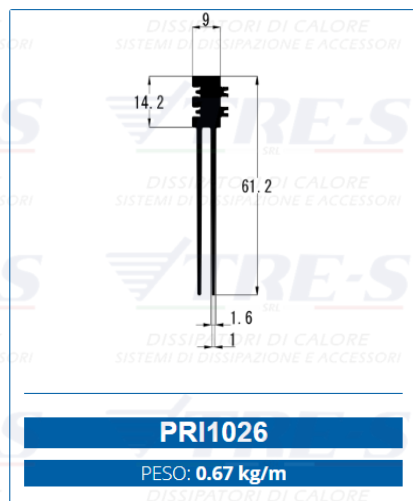
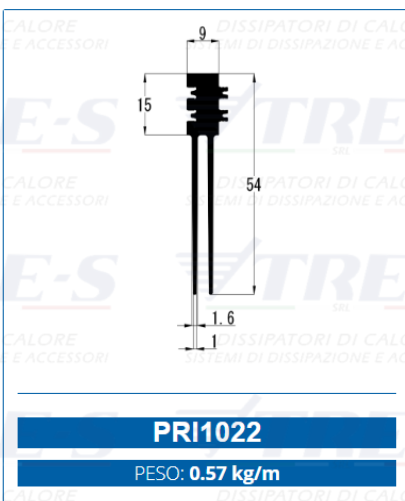
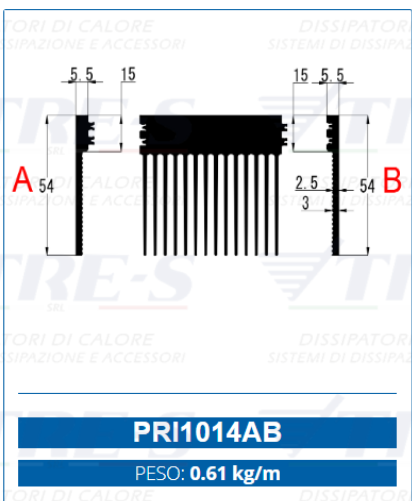
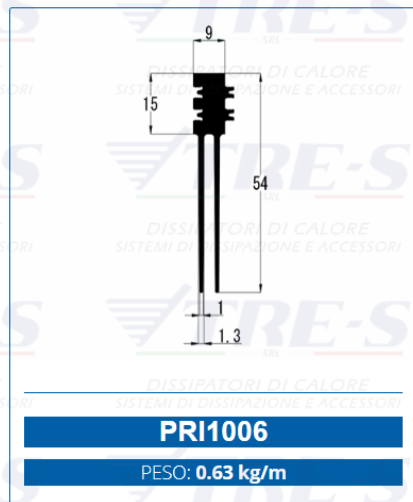
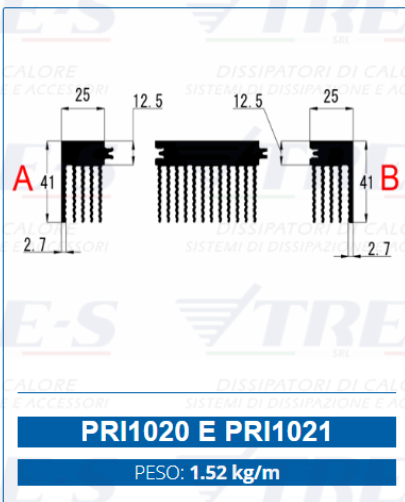
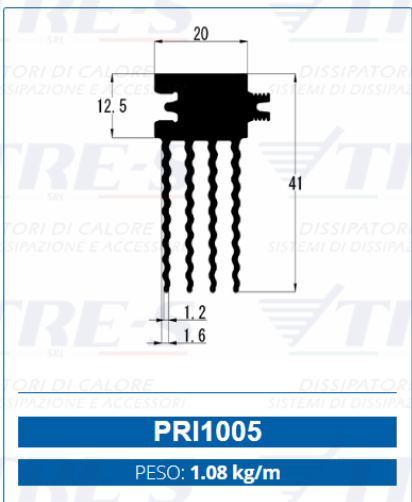
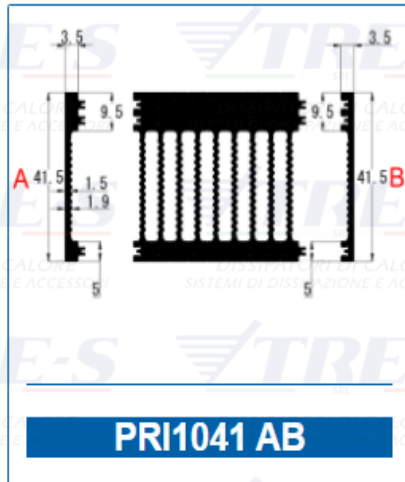
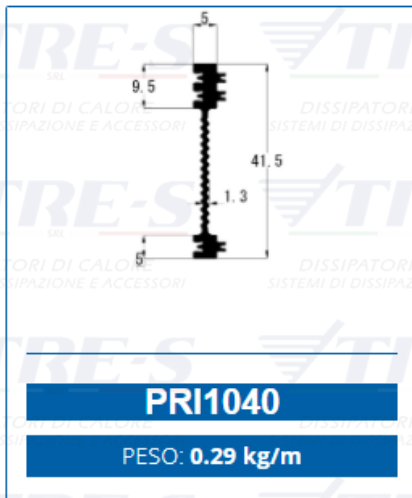
EMBEDDED HEATSINKS

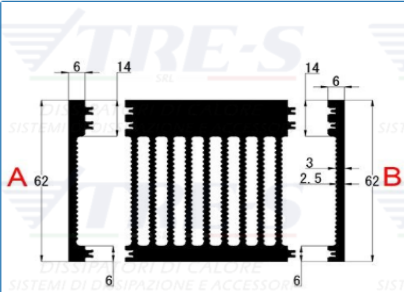
High-efficiency heat sinks are manufactured through interference fitting between modules. These high-efficiency heat sinks are constructed in order to reduce costs by channeling air and providing high performance in a compact space.



Application sectors:

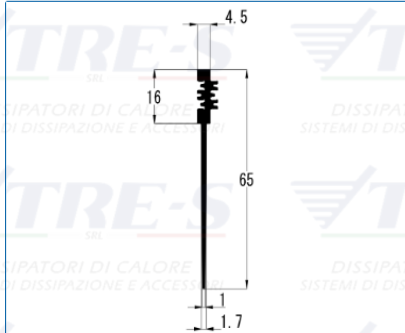
- ✓ **Welding industries**
- ✓ **Uninterruptible Power Supply (UPS) industries**
- ✓ **Automotive sector industries**
- ✓ **Traction and braking sector industries**
- ✓ **Renewable energy industries**
- ✓ **Electromedical sector industries**





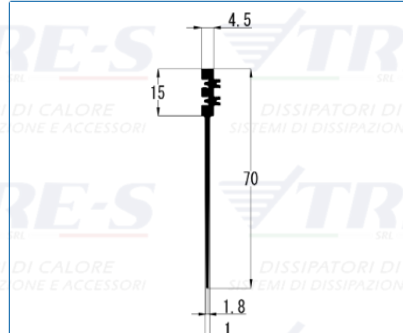
PRI1007AB

PESO: 0.44 kg/m



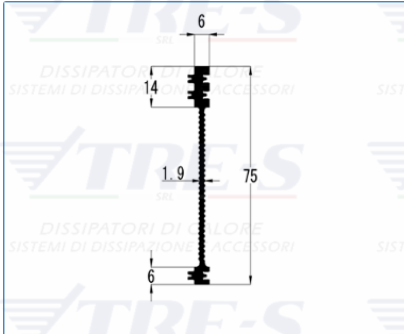
PRI1032

PESO: 0.77 kg/m



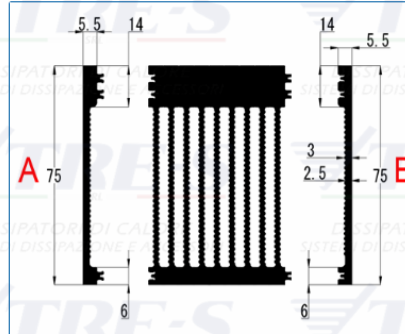
PRI1030

PESO: 0.39 kg/m



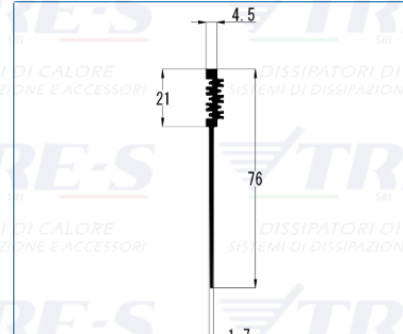
PRI1016

PESO: 0.51 kg/m



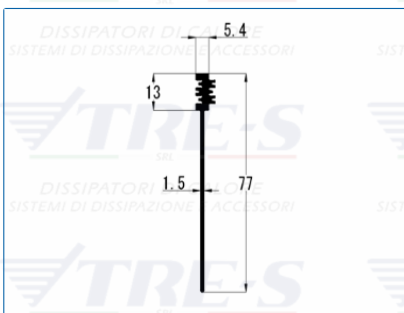
PRI1017AB

PESO: 0.45 kg/m



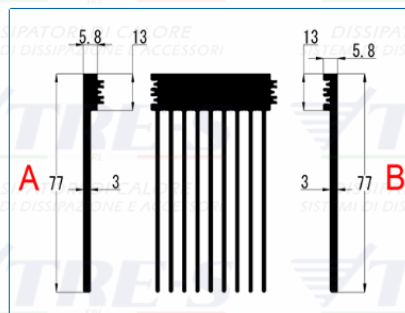
PRI1027

PESO: 0.47 kg/m



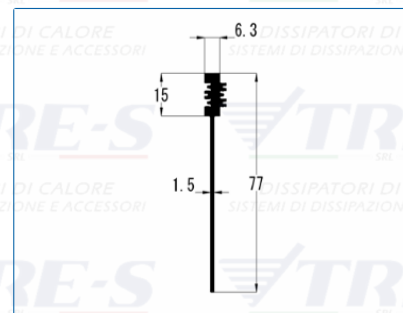
PRI1035

PESO: 0.44 kg/m



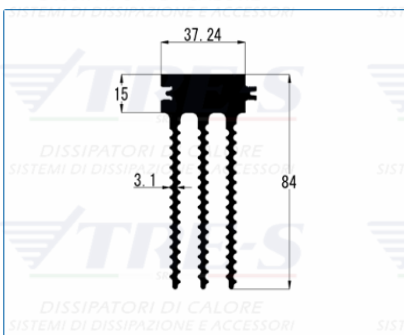
PRI1036AB

PESO: 0.64 kg/m



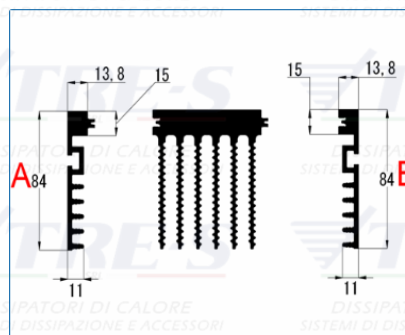
PRI1034

PESO: 0.50 kg/m



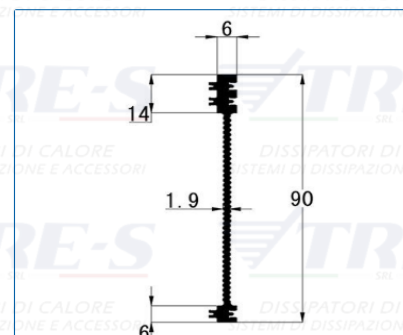
PRI1018

PESO: 3.16 kg/m



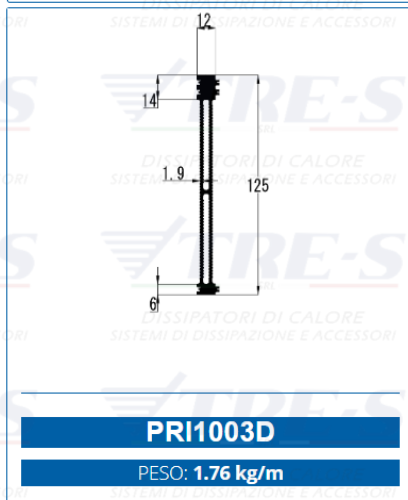
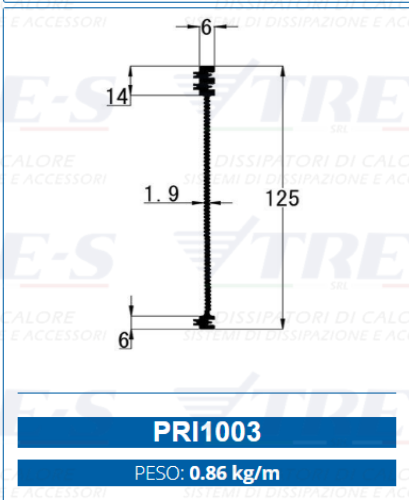
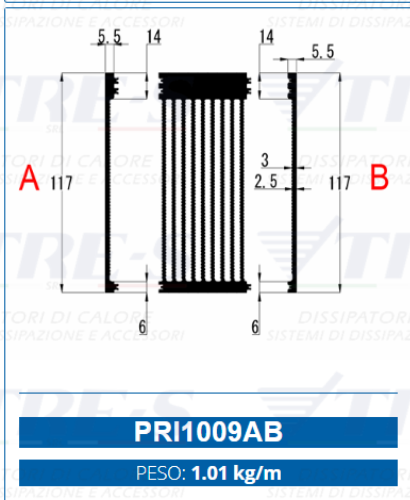
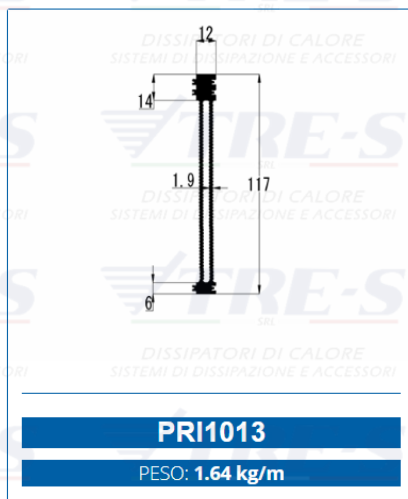
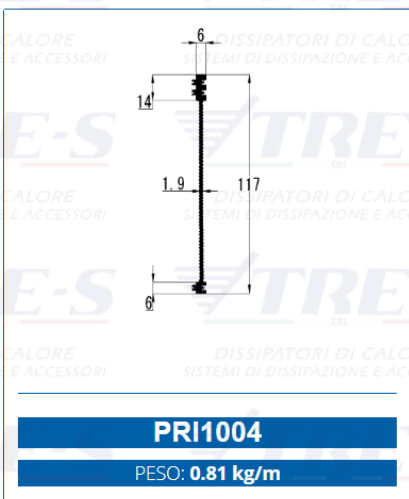
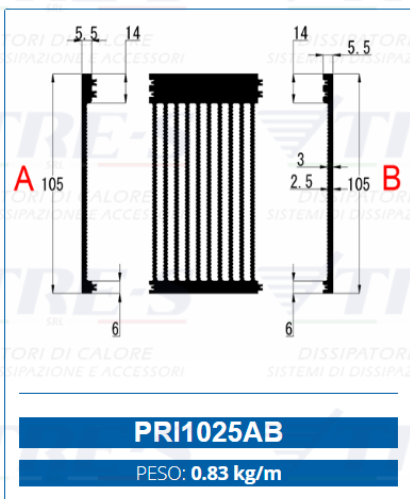
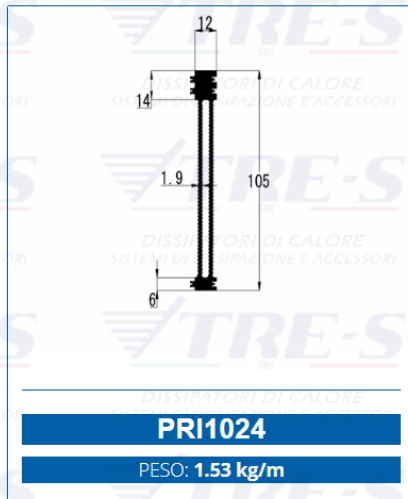
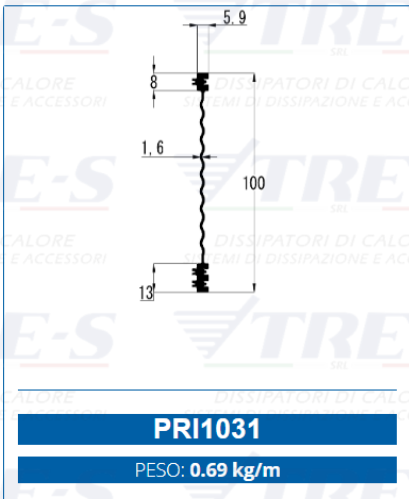
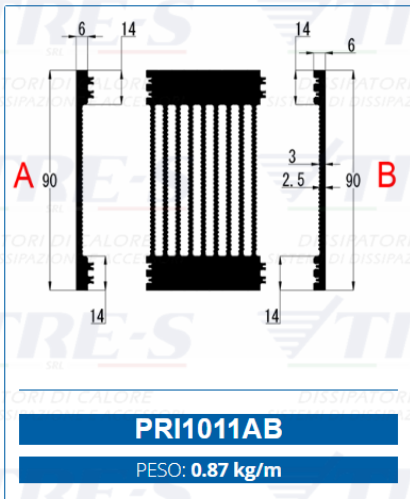
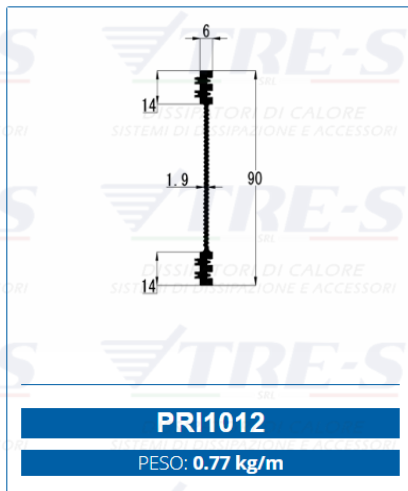
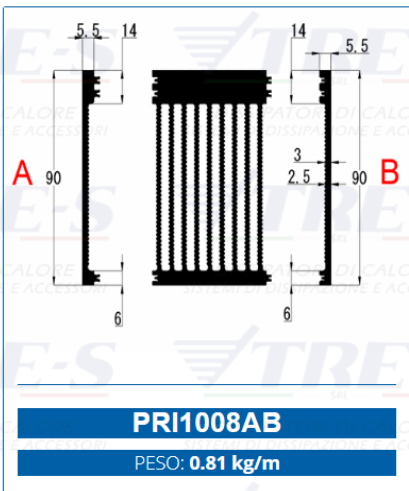
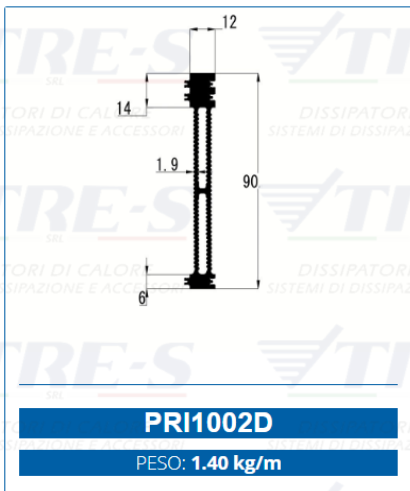
PRI1019AB

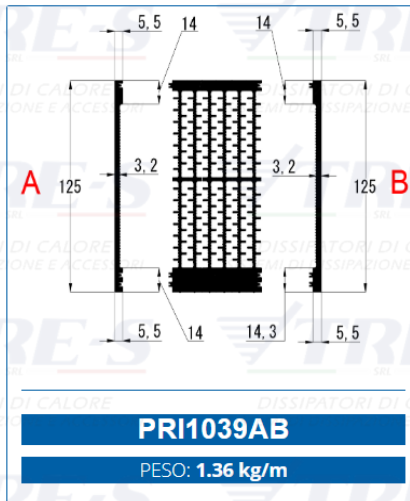
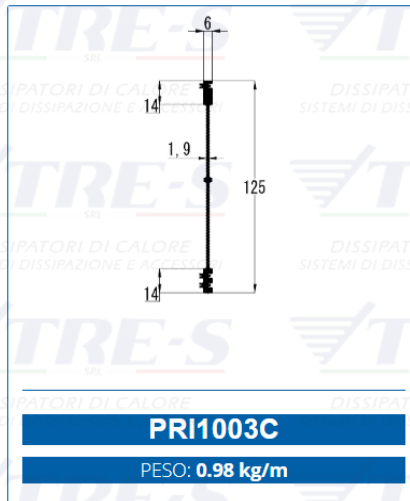
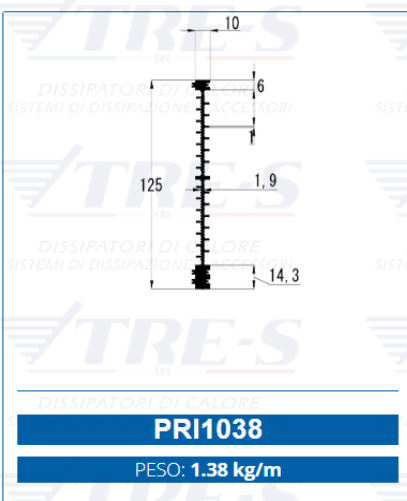
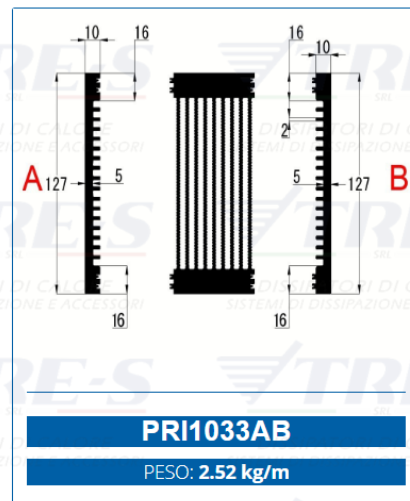
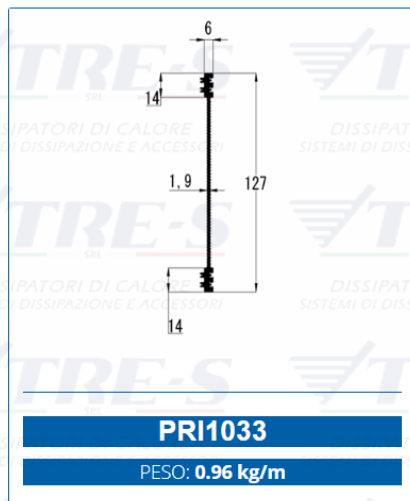
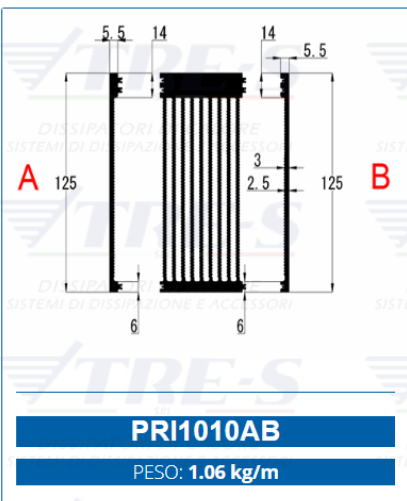
PESO: 1.52 kg/m



PRI1002

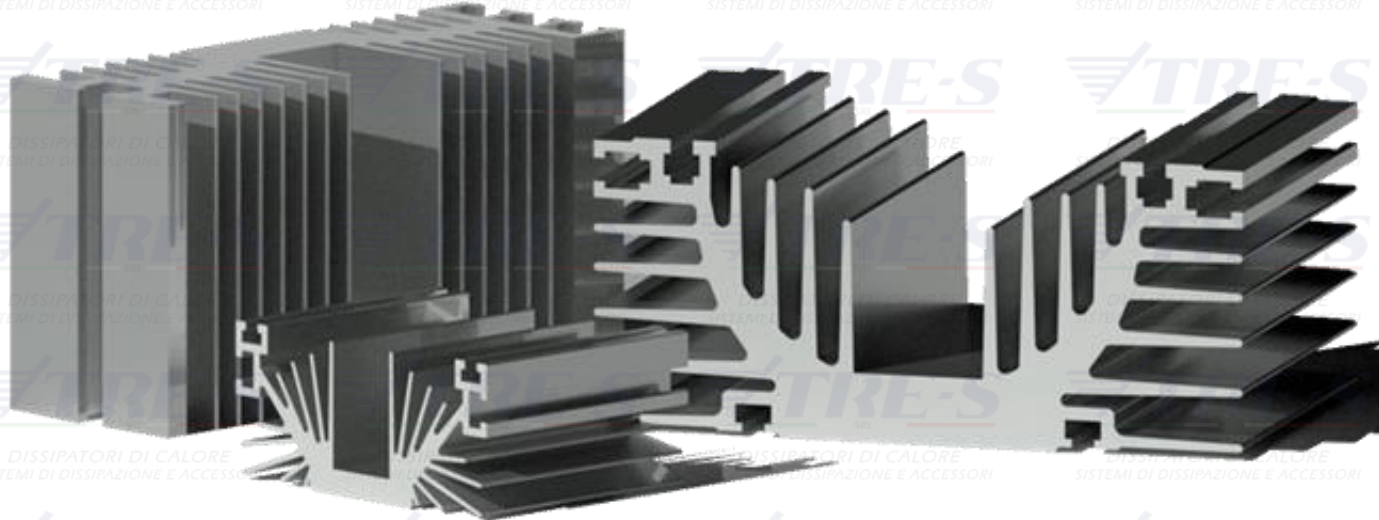
PESO: 0.68 kg/m





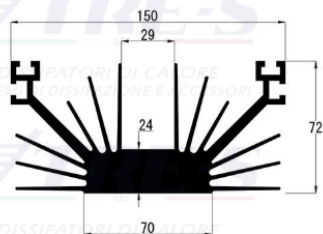
PROFILES FOR DISK CELLS

High-power dissipators, often used with clamps, for large-scale applications.



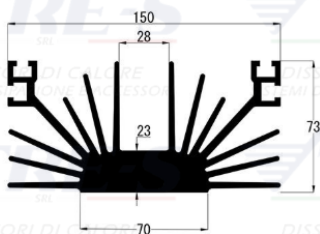
Application sectors:

- ✓ **Uninterruptible Power Supply (UPS) industries**
- ✓ **Automotive sector industries**
- ✓ **Traction and braking sector industries**



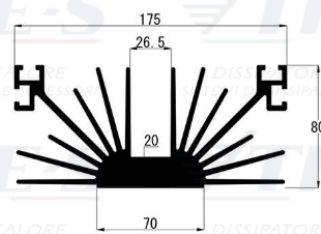
PRO1139

PESO: 8.86 kg/m



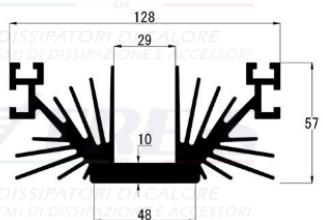
PRO1140

PESO: 10.15 kg/m



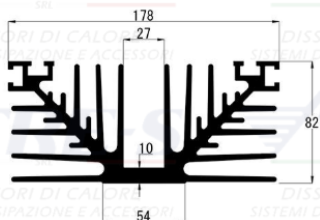
PRO1141

PESO: 11.58 kg/m



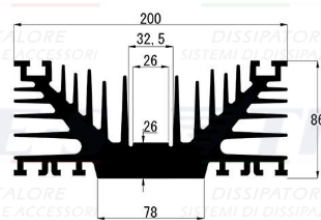
PRO1072

PESO: 5.95 kg/m



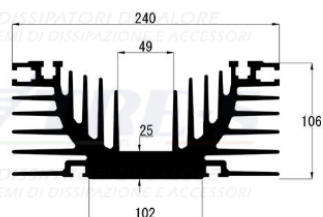
PRO1142

PESO: 12.78 kg/m



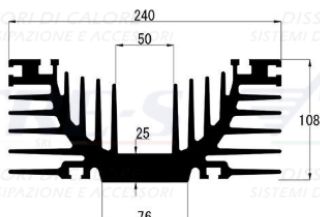
PRO1143

PESO: 19.21 kg/m



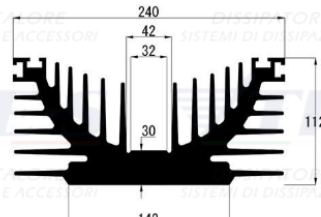
PRO1144

PESO: 25.25 kg/m



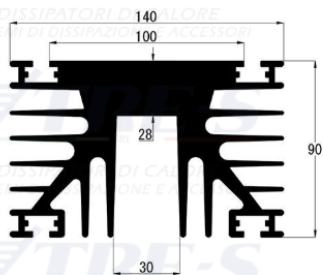
PRO1145

PESO: 26.09 kg/m



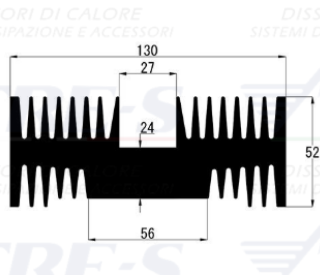
PRO1146

PESO: 29.73 kg/m



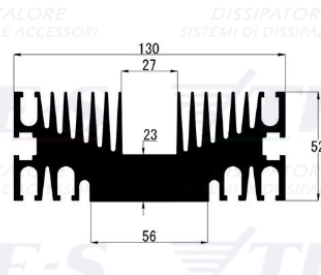
PRO1138

PESO: 14.86 kg/m



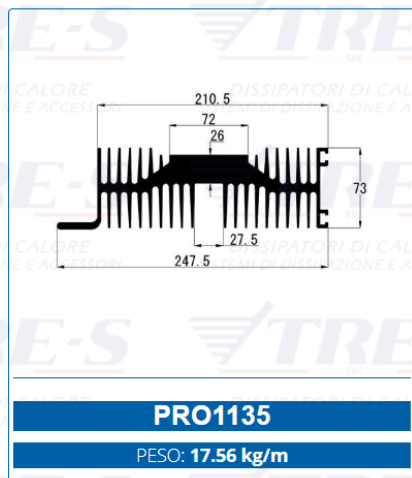
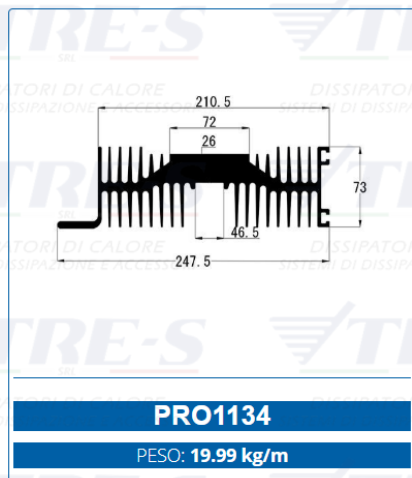
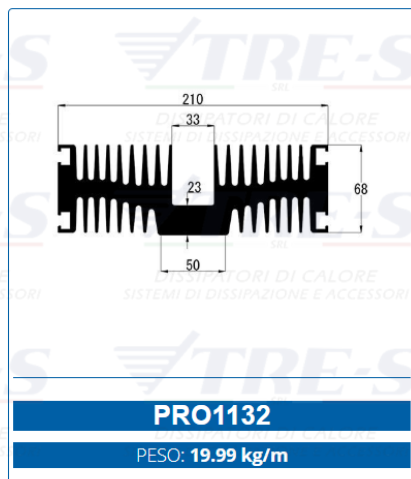
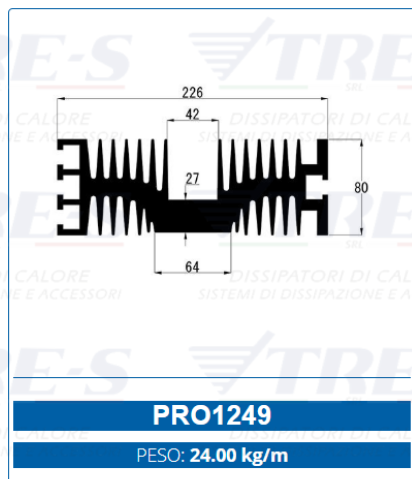
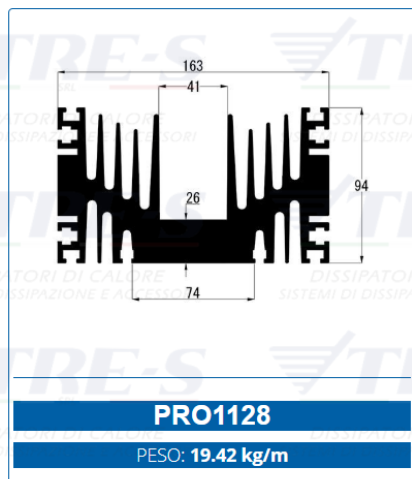
PRO1126

PESO: 10.91 kg/m



PRO1127

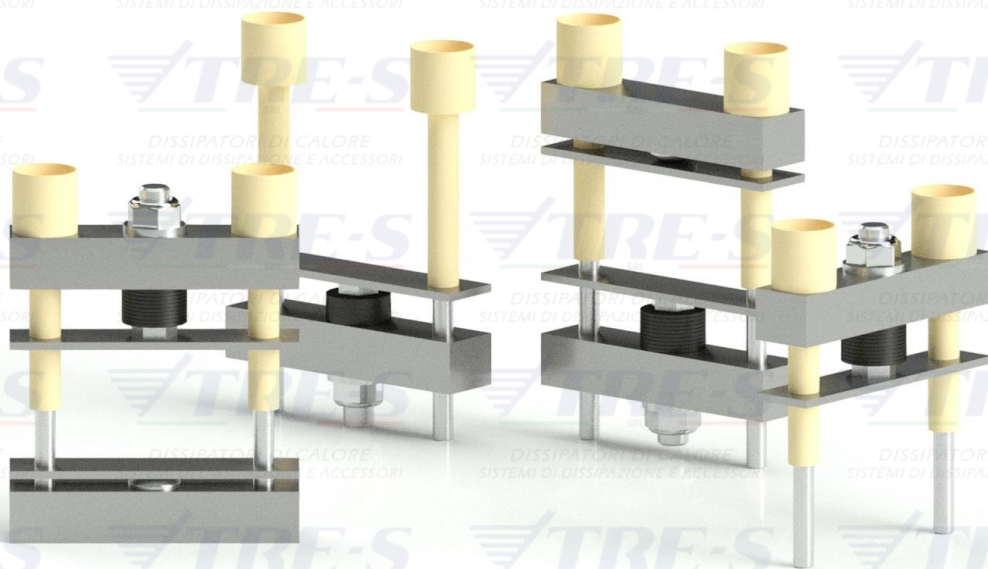
PESO: 10.03 kg/m



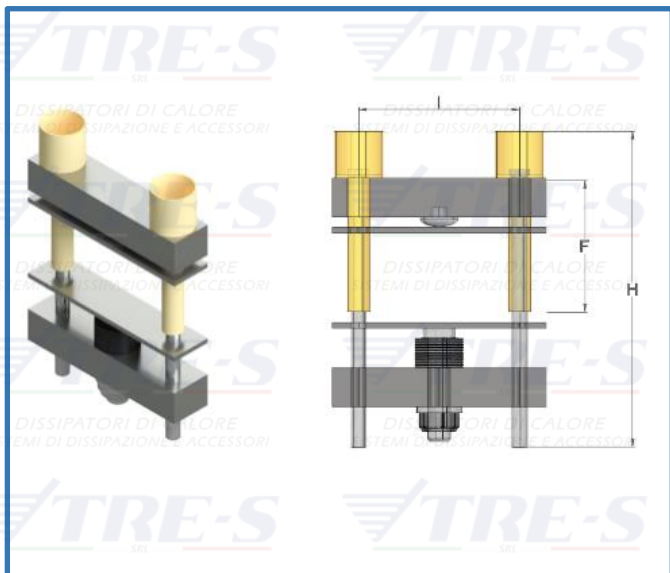
CLAMPS-SYSTEMS

Pre-set Device for diodes and thyristors. All metal surfaces are galvanically treated to prevent corrosion.

Disc diode clamps are produced with different spacings and tightening settings. Components can be provided according to customer's drawings upon request.



CLAMPS-SYSTEMS: TIPE A



Codice	KN MAX	I	F	H
KL70A/30	13	70	30	105
KL70A/40	13	70	40	115
KL70A/50	13	70	50	125
KL70A/60	13	70	60	135
KL70A/70	13	70	70	145
KL70A/80	13	70	80	155
KL70A/90	13	70	90	165
KL70A/100	13	70	100	175
KL70A/110	13	70	110	185

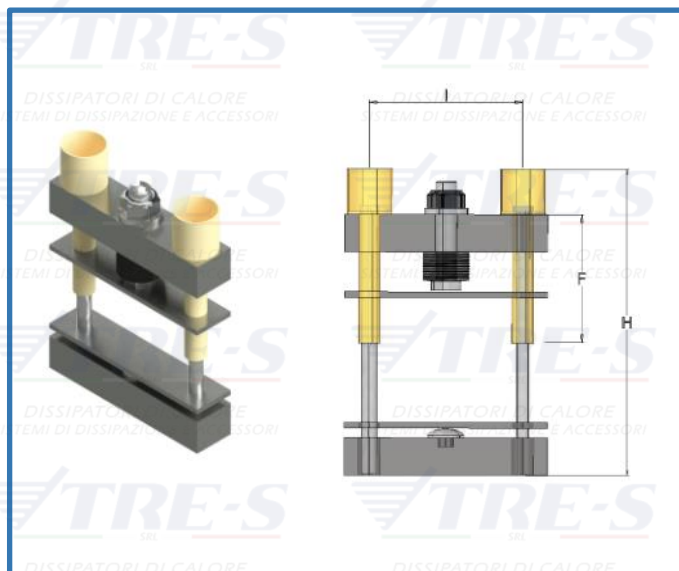
Codice	KN MAX	I	F	H
KL79A/30	20	79	30	108
KL79A/40	20	79	50	128
KL79A/60	20	79	60	138
KL79A/70	20	79	70	148
KL79A/80	20	79	80	158
KL79A/90	20	79	90	168
KL79A/100	20	79	100	178
KL79A/110	20	79	110	188

Codice	KN MAX	I	F	H
KL89A/30	25	89	30	109
KL89A/40	25	89	40	119
KL89A/50	25	89	50	129
KL89A/60	25	89	60	139
KL89A/70	25	89	70	149
KL89A/80	25	89	80	159
KL89A/90	25	89	90	169
KL89A/100	25	89	100	179
KL89A/110	25	89	110	189

Codice	KN MAX	I	F	H
KL102A/30	30	102	30	125
KL102A/40	30	102	40	135
KL102A/50	30	102	50	145
KL102A/60	30	102	60	155
KL102A/70	30	102	70	165
KL102A/80	30	102	80	175
KL102A/90	30	102	90	185
KL102A/100	30	102	100	195
KL102A/110	30	102	110	205

Codice	KN MAX	I	F	H
KL140A/30	50	140	30	180
KL140A/40	50	140	40	190
KL140A/50	50	140	50	200
KL140A/60	50	140	60	210
KL140A/70	50	140	70	220
KL140A/80	50	140	80	230
KL140A/90	50	140	90	240
KL140A/100	50	140	100	250
KL140A/110	50	140	110	260

CLAMPS-SYSTEMS: TIPE B



Codice	KN MAX	I	F	H
KL70B/30	13	70	30	107
KL70B/40	13	70	40	117
KL70B/50	13	70	50	127
KL70B/60	13	70	60	137
KL70B/70	13	70	70	147
KL70B/80	13	70	80	157
KL70B/90	13	70	90	167
KL70B/100	13	70	100	177
KL70B/110	13	70	110	187

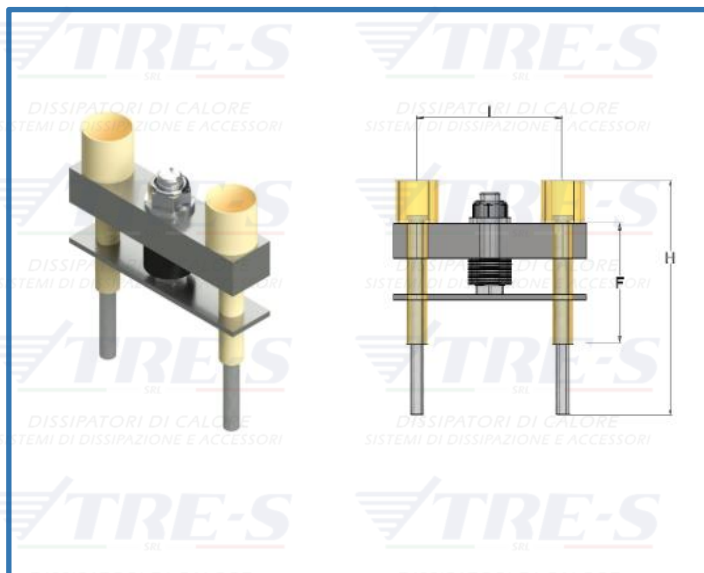
Codice	KN MAX	I	F	H
KL89B/30	25	89	30	109
KL89B/40	25	89	40	119
KL89B/50	25	89	50	129
KL89B/60	25	89	60	139
KL89B/70	25	89	70	149
KL89B/80	25	89	80	159
KL89B/90	25	89	90	169
KL89B/100	25	89	100	179
KL89B/110	25	89	110	189

Codice	KN MAX	I	F	H
KL79B/30	20	79	30	108
KL79B/40	20	79	40	118
KL79B/50	20	79	50	128
KL79B/60	20	79	60	138
KL79B/70	20	79	70	148
KL79B/80	20	79	80	158
KL79B/90	20	79	90	168
KL79B/100	20	79	100	178
KL79B/110	20	79	110	188

Codice	KN MAX	I	F	H
KL118B/30	40	118	30	136
KL118B/40	40	118	40	146
KL118B/50	40	118	50	156
KL118B/60	40	118	60	166
KL118B/70	40	118	70	176
KL118B/80	40	118	80	186
KL118B/90	40	118	90	196
KL118B/100	40	118	100	206
KL118B/110	40	118	110	216

Codice	KN MAX	I	F	H
KL102B/30	30	102	30	125
KL102B/40	30	102	40	135
KL102B/50	30	102	50	145
KL102B/60	30	102	60	155
KL102B/70	30	102	70	165
KL102B/80	30	102	80	175
KL102B/90	30	102	90	185
KL102B/100	30	102	100	195
KL102B/110	30	102	110	205

CLAMPS-SYSTEMS: TIPE C



Codice	KN MAX	I	F	H
KL70C/30	13	70	30	107
KL70C/40	13	70	40	117
KL70C/50	13	70	50	127
KL70C/60	13	70	60	137
KL70C/70	13	70	70	147
KL70C/80	13	70	80	157
KL70C/90	13	70	90	167
KL70C/100	13	70	100	177
KL70C/110	13	70	110	187

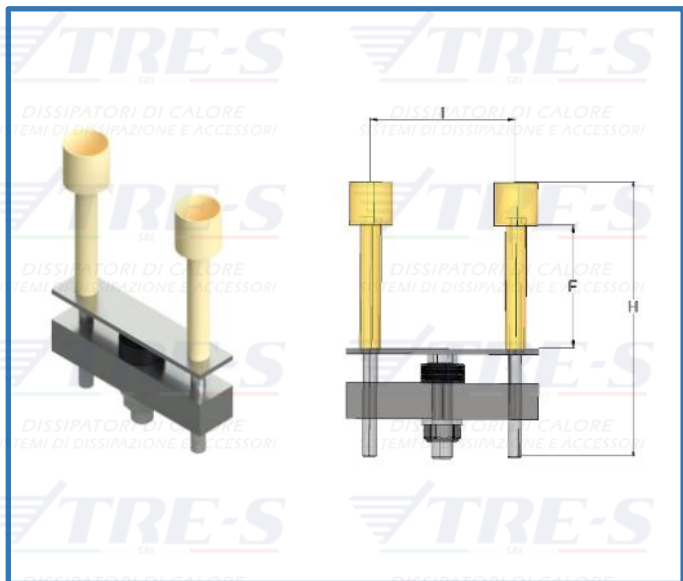
Codice	KN MAX	I	F	H
KL79C/30	20	79	30	108
KL79C/40	20	79	40	118
KL79C/50	20	79	50	128
KL79C/60	20	79	60	138
KL79C/70	20	79	70	148
KL79C/80	20	79	80	158
KL79C/90	20	79	90	168
KL79C/100	20	79	100	178
KL79C/110	20	79	110	188

Codice	KN MAX	I	F	H
KL89C/30	25	89	30	109
KL89C/40	25	89	40	119
KL89C/50	25	89	50	129
KL89C/60	25	89	60	139
KL89C/70	25	89	70	149
KL89C/80	25	89	80	159
KL89C/90	25	89	90	169
KL89C/100	25	89	100	179
KL89C/110	25	89	110	189

Codice	KN MAX	I	F	H
KL102C/30	30	102	30	125
KL102C/40	30	102	40	135
KL102C/50	30	102	50	145
KL102C/60	30	102	60	155
KL102C/70	30	102	70	165
KL102C/80	30	102	80	175
KL102C/90	30	102	90	185
KL102C/100	30	102	100	195
KL102C/110	30	102	110	205

Codice	KN MAX	I	F	H
KL118C/30	40	118	30	136
KL118C/40	40	118	40	146
KL118C/50	40	118	50	156
KL118C/60	40	118	60	166
KL118C/70	40	118	70	176
KL118C/80	40	118	80	186
KL118C/90	40	118	90	196
KL118C/100	40	118	100	206
KL118C/110	40	118	110	216

CLAMPS-SYSTEMS: TIPE D



Codice	KN MAX	I	F	H
KL70C/30	13	70	30	107
KL70C/40	13	70	40	117
KL70C/50	13	70	50	127
KL70C/60	13	70	60	137
KL70C/70	13	70	70	147
KL70C/80	13	70	80	157
KL70C/90	13	70	90	167
KL70C/100	13	70	100	177
KL70C/110	13	70	110	187

Codice	KN MAX	I	F	H
KL79C/30	20	79	30	108
KL79C/40	20	79	40	118
KL79C/50	20	79	50	128
KL79C/60	20	79	60	138
KL79C/70	20	79	70	148
KL79C/80	20	79	80	158
KL79C/90	20	79	90	168
KL79C/100	20	79	100	178
KL79C/110	20	79	110	188

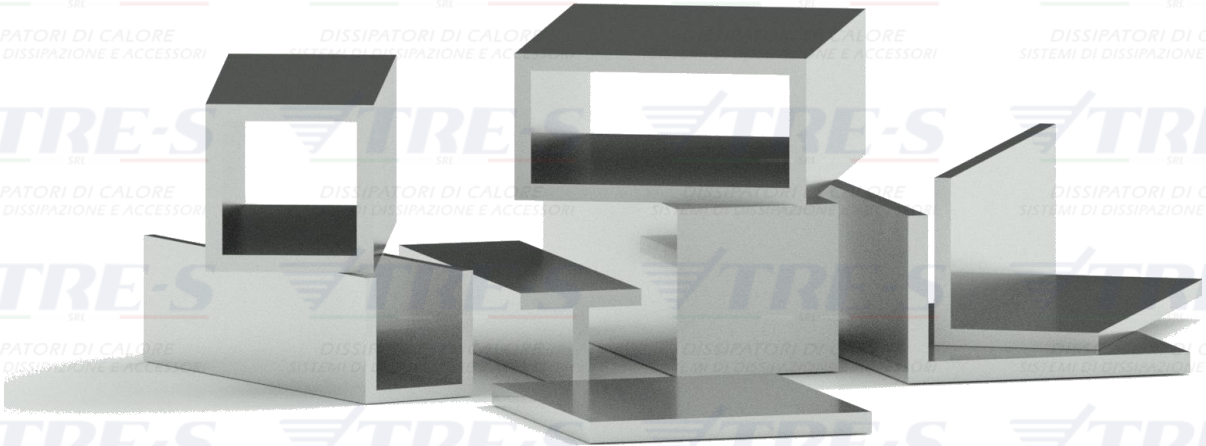
Codice	KN MAX	I	F	H
KL89C/30	25	89	30	109
KL89C/40	25	89	40	119
KL89C/50	25	89	50	129
KL89C/60	25	89	60	139
KL89C/70	25	89	70	149
KL89C/80	25	89	80	159
KL89C/90	25	89	90	169
KL89C/100	25	89	100	179
KL89C/110	25	89	110	189

Codice	KN MAX	I	F	H
KL102C/30	30	102	30	125
KL102C/40	30	102	40	135
KL102C/50	30	102	50	145
KL102C/60	30	102	60	155
KL102C/70	30	102	70	165
KL102C/80	30	102	80	175
KL102C/90	30	102	90	185
KL102C/100	30	102	100	195
KL102C/110	30	102	110	205

Codice	KN MAX	I	F	H
KL118C/30	40	118	30	136
KL118C/40	40	118	40	146
KL118C/50	40	118	50	156
KL118C/60	40	118	60	166
KL118C/70	40	118	70	176
KL118C/80	40	118	80	186
KL118C/90	40	118	90	196
KL118C/100	40	118	100	206
KL118C/110	40	118	110	216

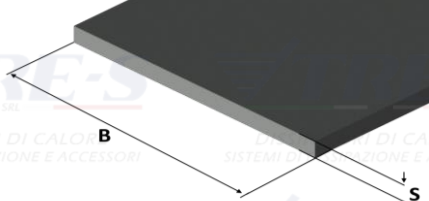
STANDARD PROFILES

Standard profiles are for general use, meaning they complement our production of heat sinks to create brackets, covers, and various CNC machining accessories.



Application sectors:

✓ **Generic**



DISSIPATORI DI CALORE
SISTEMI DI DISSIPAZIONE E ACCESSORI

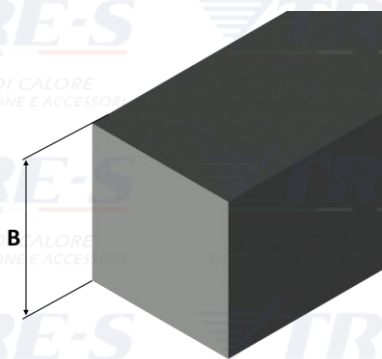
DISSIPATORI DI CALORE
SISTEMI DI DISSIPAZIONE E ACCESSORI

DISSIPATORI DI CALORE
SISTEMI DI DISSIPAZIONE E ACCESSORI

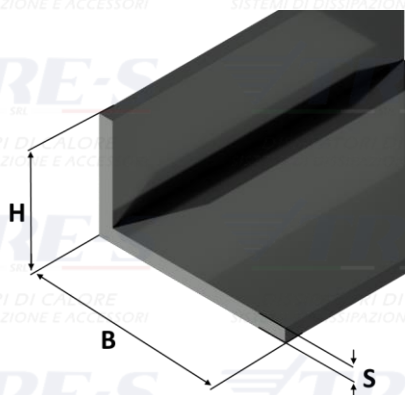
DISSIPATORI DI CALORE
SISTEMI DI DISSIPAZIONE E ACCESSORI

Lega	BxS Dimensione	Peso al metro	Lega	BxS Dimensione	Peso al metro	Lega	BxS Dimensione	Peso al metro	Lega	BxS Dimensione	Peso al metro
6060	10x2	0,054	6060	40x20	2,16	6082	70x30	5,67	2011	100x60	16,2
6060	10x3	0,081	6082	40x20	2,16	6082	70x35	6,62	6082	100x60	16,2
6060	10x4	0,108	2011	40x25	2,7	2011	70x40	7,56	6082	100x70	18,9
6060	10x5	0,135	6082	40x25	2,7	6082	70x40	7,56	2011	100x80	21,6
6060	15x2	0,081	2011	40x30	3,24	2011	70x50	9,45	6082	100x80	21,6
6060	15x3	0,121	6082	40x30	3,24	6082	70x50	9,45	6060	120x5	1,62
6060	15x4	0,162	6060	45x10	1,215	6082	70x60	11,34	6060	120x6	1,944
6060	15x5	0,203	6060	45x15	1,822	6060	80x2	0,432	6060	120x8	2,592
6060	15x8	0,328	6060	50x2	0,27	6060	80x3	0,648	6060	120x10	3,24
6060	15x10	0,405	6060	50x3	0,405	6060	80x4	0,864	6082	120x10	3,24
6060	20x2	0,108	6060	50x4	0,54	6060	80x5	1,08	6060	120x12	3,888
6060	20x3	0,162	6060	50x5	0,675	6060	80x6	1,296	6060	120x15	4,86
6060	20x4	0,216	6060	50x6	0,81	6060	80x8	1,728	6082	120x15	4,86
6060	20x5	0,27	6060	50x8	1,08	6060	80x10	2,16	6060	120x20	6,48
6060	20x6	0,324	6060	50x10	1,35	6082	80x10	2,16	6082	120x20	6,48
6060	20x8	0,432	6082	50x10	1,35	6060	80x12	2,592	6082	120x25	8,1
6060	20x10	0,54	6060	50x12	1,62	6060	80x15	3,24	6082	120x30	9,72
6082	20x10	0,54	6060	50x15	2,025	6082	80x15	3,24	2011	120x40	12,96
6060	20x12	0,648	6082	50x15	2,025	2011	80x20	4,32	6082	120x40	12,96
6060	20x15	0,815	2011	50x20	2,7	6060	80x20	4,32	2011	120x50	16,2
6082	20x15	0,815	6060	50x20	2,7	6082	80x20	4,32	6082	120x50	16,2
6060	25x2	0,135	6082	50x20	2,7	6082	80x25	5,4	2011	120x60	19,44
6060	25x3	0,203	2011	50x25	3,38	2011	80x30	6,48	6082	120x60	19,44
6060	25x4	0,27	6082	50x25	3,38	6082	80x30	6,48	6082	120x80	25,92
6060	25x5	0,338	2011	50x30	4,05	2011	80x40	8,64	6082	120x90	29,16
6060	25x6	0,405	6082	50x30	4,05	6082	80x40	8,64	6060	150x5	2,025
6060	25x8	0,54	2011	50x35	4,725	2011	80x50	10,8	6060	150x6	2,43
6060	25x10	0,675	6082	50x35	4,725	6082	80x50	10,8	6060	150x8	3,24
6082	25x10	0,675	2011	50x40	5,4	2011	80x60	12,96	6060	150x10	4,05
6060	25x12	0,81	6082	50x40	5,4	6082	80x60	12,96	6060	150x12	4,86
6060	25x15	1,013	6060	60x2	0,324	6060	90x5	1,215	6060	150x15	6,075
6082	25x15	1,013	6060	60x3	0,486	6060	90x8	1,944	6082	150x15	6,075
6082	25x20	1,35	6060	60x4	0,648	6060	90x10	2,43	6060	150x20	8,1
6060	30x2	0,162	6060	60x5	0,81	6060	90x12	2,916	6082	150x20	8,1
6060	30x3	0,243	6060	60x6	0,972	6060	90x15	3,645	6082	150x25	10,125
6060	30x4	0,324	6060	60x8	1,296	6082	90x20	4,86	6082	150x30	12,15
6060	30x5	0,405	6060	60x10	1,62	2011	90x30	7,29	6082	150x40	16,2
6060	30x6	0,486	6082	60x10	1,62	6082	90x30	7,29	6082	150x50	20,25
6060	30x8	0,648	6060	60x12	1,944	2011	90x40	9,72	6082	150x60	24,3
6060	30x10	0,81	6060	60x15	2,43	6082	90x40	9,72	6082	150x80	32,4
6082	30x10	0,81	6082	60x15	2,43	2011	90x50	12,15	6060	160x10	4,32
6060	30x12	0,972	2011	60x20	3,24	6082	90x50	12,15	6060	160x15	6,48
6060	30x15	1,215	6060	60x20	3,24	2011	90x60	14,58	6060	160x20	8,65
6082	30x15	1,215	6082	60x20	3,24	6082	90x60	14,58	6060	180x10	4,86
2011	30x20	1,62	2011	60x25	4,05	2011	90x70	17,01	6060	180x15	7,29
6060	30x20	1,62	6082	60x25	4,05	6082	90x70	17,01	6060	180x20	9,72
6082	30x20	1,62	2011	60x30	4,86	6060	100x2	0,54	6060	200x6	3,24
6082	30x25	2,025	6082	60x30	4,86	6060	100x3	0,81	6060	200x8	4,32
6060	35x4	0,378	2011	60x35	5,67	6060	100x4	1,08	6060	200x10	5,4
6060	35x5	0,472	6082	60x35	5,67	6060	100x5	1,35	6082	200x10	5,4
6060	35x6	0,567	2011	60x40	6,48	6060	100x6	1,62	6060	200x12	6,48
6060	35x8	0,756	6082	60x40	6,48	6060	100x8	2,16	6060	200x15	8,1
6060	35x10	0,945	2011	60x50	8,1	6060	100x10	2,7	6082	200x15	8,1
6060	35x15	1,418	6082	60x50	8,1	6082	100x10	2,7	6060	200x20	10,8
6082	35x20	1,89	6060	70x5	0,945	6060	100x12	3,24	6082	200x20	10,8
6060	40x2	0,216	6060	70x6	1,134	6060	100x15	4,05	6082	200x25	13,5
6060	40x3	0,324	6060	70x8	1,512	6082	100x15	4,05	6082	200x30	16,2
6060	40x4	0,432	6060	70x10	1,89	2011	100x20	5,4	6082	200x40	22,4
6060	40x5	0,54	6082	70x10	1,89	6060	100x20	5,4	6082	200x50	27
6060	40x6	0,648	6060	70x12	2,268	6082	100x20	5,4	6060	250x10	6,75
6060	40x8	0,865	6060	70x15	2,836	6082	100x25	6,75	6060	250x12	8,1
6060	40x10	1,08	6082	70x15	2,836	2011	100x30	8,1	6060	250x15	10,125
6082	40x10	1,08	2011	70x20	3,78	6082	100x30	8,1	6082	250x20	13,5
6060	40x12	1,296	6060	70x20	3,78	2011	100x40	10,8	6082	250x25	16,88
6060	40x15	1,62	6082	70x20	3,78	6082	100x40	10,8	6060	300x15	12,15
6082	40x15	1,62	6082	70x25	4,725	2011	100x50	13,5	6082	300x20	16,2
2011	40x20	2,16	2011	70x30	5,67	6082	100x50	13,5			

SQUARE BAR



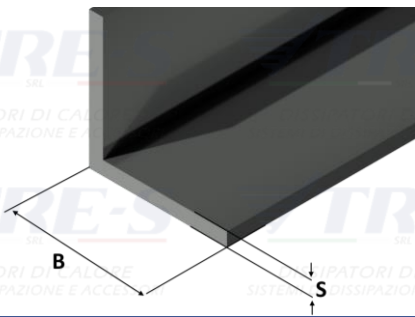
Lega	B Dimensione	Peso al metro	Lega	B Dimensione	Peso al metro	Lega	B Dimensione	Peso al metro	Lega	B Dimensione	Peso al metro
6060	6	0,098	2011	25	1,69	6082	60	9,72	6082	110	32,67
6060	8	0,173	6082	30	2,43	2011	60	9,72	2011	110	32,67
6060	10	0,27	2011	30	2,43	6082	65	11,407	6082	120	38,88
6060	12	0,338	6082	35	3,307	6082	70	13,23	2011	120	38,88
6082	15	0,608	2011	35	3,307	2011	70	13,23	6082	130	45,63
6060	15	0,608	6082	40	4,32	6082	80	17,28	6082	140	52,92
6082	18	0,875	2011	40	4,32	2011	80	17,28	6082	150	60,75
6082	20	1,08	6082	45	5,468	6082	90	21,9	6082	160	69,12
2011	20	1,08	6082	50	6,75	2011	90	21,9	6082	170	77,03
6060	20	1,08	2011	50	6,75	6082	100	27	6082	180	87,48
6082	25	1,69	6082	55	8,168	2011	100	27	6082	200	108



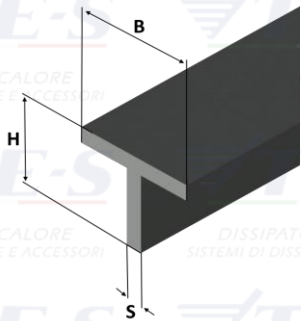
CORNER UNITS UNEQUAL SIDES

Lega	BxHxS Dimensione	Peso al metro	Lega	BxHxS Dimensione	Peso al metro	Lega	BxHxS Dimensione	Peso al metro	Lega	BxHxS Dimensione	Peso al metro
6060	15x10x1,5	0,054	6060	40x20x2	0,162	6060	60x30x3	0,27	6060	100x20x2	0,243
6060	20x10x2	0,081	6060	40x25x2	0,216	6060	60x40x2	0,338	6060	100x30x2	0,324
6060	20x15x2	0,108	6060	40x30x2	0,27	6060	60x40x4	0,405	6060	100x50x2	0,405
6060	25x10x2	0,135	6060	50x20x2	0,324	6060	60x40x5	1,282	6060	100x50x5	0,486
6060	25x15x2	0,081	6060	50x25x2	0,432	6060	70x20x2	0,54	6060	100x50x8	3,067
6060	25x20x2	0,121	6060	50x30x2	0,54	6060	80x20x2	0,675	6060	100x50x10	3,78
6060	30x10x2	0,162	6060	50x30x3	0,648	6060	80x40x2	0,81	6060	115x65x6	2,819
6060	30x15x2	0,203	6060	50x30x5	0,815	6060	80x40x4	1,013	6060	120x60x6	0,648
6060	30x20x2	0,328	6060	60x20x2	0,135	6060	80x40x6	0,162	6060	120x60x8	3,715
6060	35x15x2	0,405	6060	60x30x2	0,203	6060	80x50x10	3,24	6060	160x100x12	7,91
6060	40x15x2	0,108									

CORNERS EQUAL SIDES

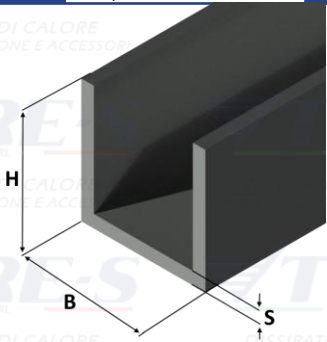


Lega	BxS Dimensione	Peso al metro	Lega	BxS Dimensione	Peso al metro	Lega	BxS Dimensione	Peso al metro	Lega	BxS Dimensione	Peso al metro
6060	10x1,5	0,078	6060	30x2	0,313	6060	50x3	0,786	6060	60x10	2,97
6060	15x1,5	0,115	6060	30x3	0,462	6060	50x4	1,037	6060	80x5	2,092
6060	15x2	0,152	6060	30x4	0,604	6060	50x5	1,283	6060	80x8	3,284
6060	20x1,5	0,155	6060	35x2	0,367	6060	50x6	1,523	6060	80x10	4,05
6060	20x2	0,205	6060	40x2	0,421	6060	50x10	2,43	6060	100x4	2,116
6060	20x3	0,3	6060	40x3	0,623	6060	60x2	0,637	6060	100x8	4,148
6060	25x2	0,259	6060	40x4	0,82	6060	60x4	1,253	6060	100x10	5,13
6060	25x3	0,381	6060	40x5	1,012	6060	60x6	1,85	6060	150x14	10,924
6060	30x1,5	0,237	6060	50x2	0,529	6060	60x8	2,42			



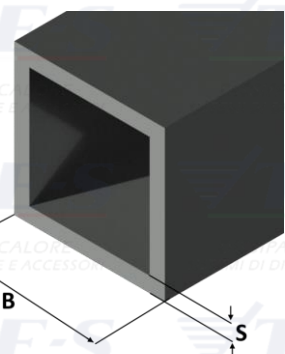
"I" PROFILES

Lega	BxHxS Dimensione	Peso al metro	Lega	BxHxS Dimensione	Peso al metro	Lega	BxHxS Dimensione	Peso al metro	Lega	BxHxS Dimensione	Peso al metro
6060	10x10x1,5	0,073	6060	25x25x2	0,259	6060	40x40x2	0,42	6060	60x60x4	1,252
6060	15x15x1,5	0,116	6060	30x30x2	0,313	6060	40x40x4	0,821	6060	60x60x6	1,846
6060	15x15x2	0,151	6060	35x35x2	0,367	6060	50x50x3	0,786			
6060	20x20x2	0,205	6060	40x20x2	0,314	6060	50x50x5	1,283			



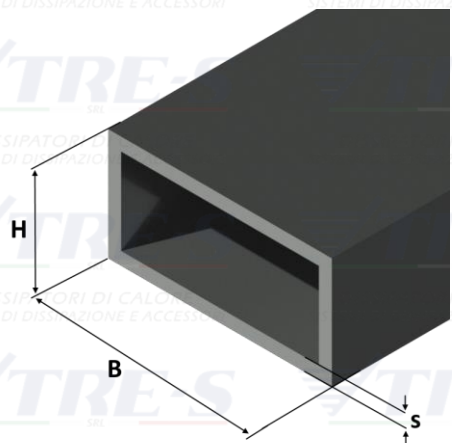
"U" PROFILES

Lega	BxHxS Dimensione	Peso al metro	Lega	BxHxS Dimensione	Peso al metro	Lega	BxHxS Dimensione	Peso al metro	Lega	BxHxS Dimensione	Peso al metro
6060	6X6X1	0,044	6060	30x20x2	0,357	6060	45X45X2	0,707	6060	80x40x2	0,842
6060	8X8X1	0,06	6060	30x30x2	0,464	6060	50x20x2	0,465	6060	80x40x4	1,642
6060	10X10X1	0,076	6060	35x35x2	0,546	6060	50x25x2	0,518	6060	80X50X5	2,295
6060	12X12X1	0,092	6060	40X10X2	0,302	6060	50x30x2	0,573	6060	80X60X8	3,98
6060	15x15x1,5	0,17	6060	40x15x2	0,356	6060	50X50X2	0,789	6060	100x20x2	0,735
6060	20x10x2	0,194	6060	40x20x2	0,41	6060	50x50x5	1,88	6060	100x50x5	2,6
6060	20x20x2	0,302	6060	40x25x2	0,465	6060	60x20x2	0,518	6060	100x50x10	4,86
6060	25X10X1,5	0,17	6060	40x40x2	0,626	6060	60x30x2	0,626	6060	120X30X1,7	0,81
6060	25x25x2	0,383	6060	40x40x4	1,209	6060	60x40x2	0,734	6060	120X60X10	5,94
6060	30x10x2	0,248	6060	45X20X2	0,437	6060	60x40x4	1,426	6060	200X100X10	10,26
6060	30x15x2	0,302	6060	45X30X2	0,546	6060	80x20x2	0,62			



'SQUARE PIPE'

Lega	BxS Dimensione	Peso al metro	Lega	BxS Dimensione	Peso al metro	Lega	BxS Dimensione	Peso al metro	Lega	BxS Dimensione	Peso al metro
6060	10x1	0,097	6060	30x3	0,875	6060	50x2	1,04	6060	80x4	3,283
6060	15x1,5	0,219	6060	35x1,5	0,543	6060	50x3	1,523	6060	100x2	2,117
6060	15x2	0,281	6060	35x2	0,715	6060	50x4	1,988	6060	100x4	4,148
6060	20x1,5	0,295	6060	40x1,5	0,624	6060	50x5	2,43	6060	120x2,5	3,172
6060	20x2	0,389	6060	40x2	0,82	6060	60x2	1,252	6060	120x4	5,011
6060	25x1,5	0,382	6060	40x3	1,2	6060	60x3	1,847	6060	150x5	7,83
6060	25x2	0,497	6060	40x4	1,56	6060	60x4	2,419			
6060	30x1,5	0,462	6060	45x2	0,919	6060	70x2	1,47			
6060	30x2	0,605	6060	50x1,5	0,785	6060	80x2	1,685			



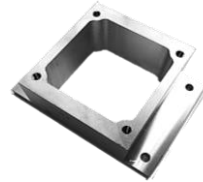
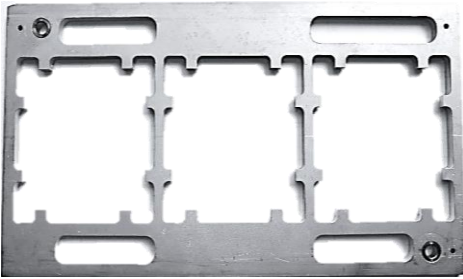
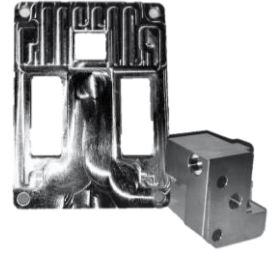
'RECTANGULAR TUBE'

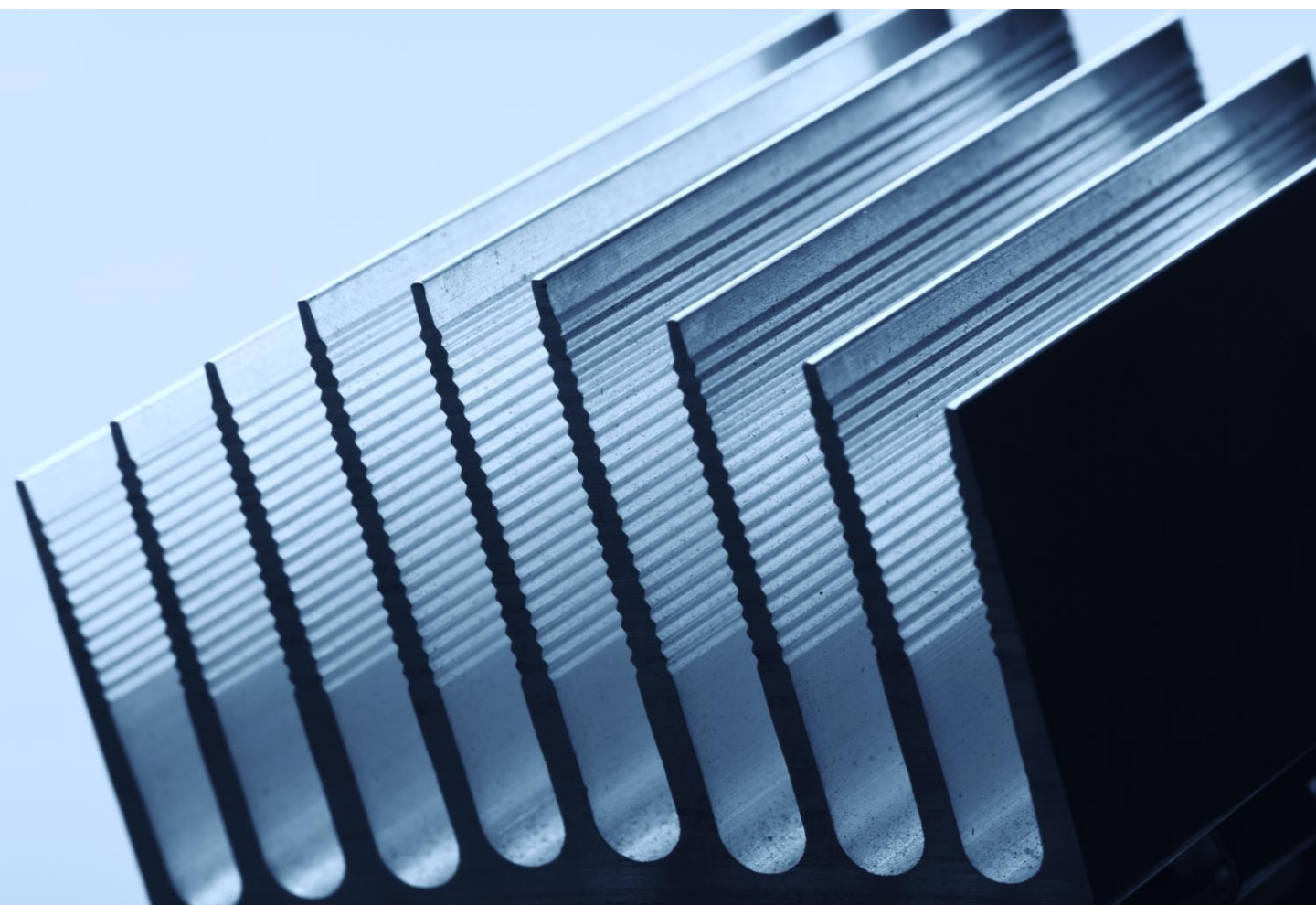
Lega	BxHxS Dimensione	Peso al metro	Lega	BxHxS Dimensione	Peso al metro	Lega	BxHxS Dimensione	Peso al metro	Lega	BxHxS Dimensione	Peso al metro
6060	20x10x1,5	0,22	6060	40x30x2	0,71	6060	60x40x4	1,99	6060	100x40x2	1,47
6060	20x15x1,5	0,26	6060	45x20x2	0,61	6060	70x20x2	0,93	6060	100x50x2	1,57
6060	25x15x1,5	0,3	6060	50x15x2	0,66	6060	70x30x2	1,04	6060	100x50x3	2,37
6060	30x10x1,5	0,3	6060	50x20x2	0,71	6060	80x15x2	0,98	6060	100x50x4	3,07
6060	30x15x1,5	0,34	6060	50x25x2	0,77	6060	80x20x2	1,04	6060	100x50x5	3,78
6060	30x15x2	0,44	6060	50x25x3	1,12	6060	80x30x2	1,14	6060	120x20x2	1,47
6060	30x20x1,5	0,38	6060	50x30x2	0,82	6060	80x40x2	1,25	6060	120x40x2	1,69
6060	30x20x2	0,5	6060	50x30x3	1,2	6060	80x40x3	1,85	6060	120x50x3	2,66
6060	35x20x2	0,55	6060	50x40x2	0,93	6060	80x40x4	2,42	6060	120x60x5	4,73
6060	40x10x1,5	0,38	6060	58x20x3	1,17	6060	80x50x2	1,36	6060	150x20x1,8	1,62
6060	40x15x2	0,55	6060	60x20x2	0,82	6060	80x50x4	2,64	6060	150x50x4	4,15
6060	40x20x1,5	0,46	6060	60x30x1,2	0,59	6060	100x20x2	1,25	6060	150x75x8	9,03
6060	40x20x2	0,61	6060	60x30x2	0,93	6060	100x25x2	1,31	6060	197x97x8,5	12,71
6060	40x20x3	0,88	6060	60x30x3	1,36	6060	100x30x2	1,36	6060	200x50x4	5,23
6060	40x25x2	0,66	6060	60x40x2	1,04	6060	100x30x3	2,01	6060	200x100x5	7,83

FIXINGS

One of our greatest strengths is being able to assist the customer with various requests; in fact, we are able to provide various custom accessories upon request.

These processes are based on profiles, extrusions, or solid pieces as described in the images.:





 **TRE-S**
SRL
DISSIPATORI DI CALORE
SISTEMI DI DISSIPAZIONE E ACCESSORI

Via del Progresso, 26 – 36050 SOVIZZO (VICENZA) –
ITALY

Tel. 0444.551224 – Fax 0444.376246 –

Cod.Fis. P. Iva e Reg. Imp. di Vicenza 02505070249

www.tre-s-srl.it – tre-s@tre-s-srl.it